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OF



MINISTERIAL ECONOMY

TWELFTH ANNUAL REPORT
OF THE
Department of
Mines and Minerals
OF THE
PROVINCE OF ALBERTA
FOR THE

Fiscal Year Ended March 31st
1961

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TWELFTH ANNUAL REPORT

OF THE

Department of Mines and Minerals

OF THE

PROVINCE OF ALBERTA

FOR THE

Fiscal Year Ended March 31st

1961

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1921

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To the Honourable J. Percy Page,

Lieutenant Governor of the Province of Alberta.

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Sir:

I have the honour to submit the Report of the Department of Mines and Minerals for the fiscal year ended March 31st, 1961.

I have the honour to be, Sir,

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Your obedient servant,

ERNEST C. MANNING,
Minister of Mines and Minerals.

Edmonton, October 16th, 1961.

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J. M. Novak..... Superintendent	
E. G. Staniforth..... Assistant Superintendent	

TWELFTH ANNUAL REPORT

CHIEF OFFICERS
DEPARTMENT OF MINES AND MINERALS
MARCH 31st, 1961

Hon. Ernest C. Manning.....*Minister*
H. H. Somerville.....*Deputy Minister*
G. W. Acorn.....*Solicitor*
C. W. Jackman.....*Economist*
W. E. Shillabeer.....*Administrative Accountant and
Personnel Officer*

MINERAL RIGHTS DIVISION

J. W. Patrick.....*Director*
R. A. Seaton.....*Assistant Director*
D. R. Jordan.....*Supervisor of Revenue*
D. F. Morrison.....*Supervisor of Leases and Mining
Recorder, Edmonton District*
D. C. MacMillan.....*Mining Recorder, Calgary District*

MINERAL TAX DIVISION

J. A. Savage.....*Superintendent*
I. M. Harrington.....*Assistant Superintendent*
W. McGeachie.....*Chief Assessor*

MINES DIVISION

J. A. Dutton.....*Director*
J. D. B. Brown.....*Assistant Director*

PIPE LINE DIVISION

W. Rutherford.....*Superintendent*

TECHNICAL DIVISION

J. M. Novak.....*Superintendent*
E. G. Staniforth.....*Assistant Superintendent*

TWELFTH ANNUAL REPORT of the Department of Mines and Minerals

HONOURABLE ERNEST C. MANNING,
Minister of Mines and Minerals,
Edmonton, Alberta.

SIR:

I have the honour to present the Annual Report of the Department of Mines and Minerals for the fiscal year ending March 31, 1961.

Crude oil production in 1960 was slightly above 1959 but still considerably below the peak reached in 1956. There was an increase of over fifty per cent in the deliveries to the Great Lakes area of the United States, but this was largely offset by a reduction in the use of Alberta crude in Ontario and an increase in the proportion of condensate used in refineries in Alberta.

Natural gas sales showed a substantial increase. Alberta gas sales in Eastern Canada increased by twenty per cent. Gas deliveries to United States markets through Emerson, Manitoba, started in November. Alberta gas deliveries to the Pacific Northwest States through British Columbia were slightly over half the authorized withdrawals.

Construction of fifteen gas processing plants was completed in 1960, bringing to forty-five the number of plants in operation at the end of the year. During 1960 nineteen additional communities in Alberta received natural gas service.

Drilling activity continued to accentuate field development rather than exploration. Exploratory successes showed a high percentage of gas well completions. No major oil discoveries were recorded. There were 133 successful wildcat wells of which only forty-one found oil. The record footage drilled of 10.1 million feet is largely due to the increased average completion depth, rather than the larger number of holes drilled. It is significant that there was a fourteen per cent increase in the number of development completions and a seven per cent decrease in the number of exploratory completions.

Several extensions were made to oil fields in the Swan Hills area. A number of Cardium oil discoveries were made in the south-central section of the Province.

The more important gas discoveries were all made in the foothills. The largest of these discoveries was made seventy miles northwest of Calgary at Wildhorse Creek. Other significant gas discoveries were made in the Nordegg area where two successful exploratory ventures were completed.

Exploration of the iron ore deposit in the Clear Hills continued. Experiments to determine if there is an economic method of treating the ore were conducted by the Research Council of Alberta and private industry.

Two new Statutes concerning mineral ownership came into force at the 1961 Session of the Legislature.

One of these Statutes, cited as "The Mineral Declaratory Act", includes a list of substances which are declared to be, and at all times to have been minerals. The substances are:

Anhydrite	Gypsum	Sandstone
Barite	Limestone	Serpentine
Bauxite	Marble	Shale
Bentonite	Mica	Slate
Diatomite	Mirabilite	Talc
Dolomite	Potash	Thenardite
Epsomite	Quartz Rock	Trona
Granite	Rock Phosphate	Volcanic Ash

This Act applies to all land including Crown land. A section protects persons who in good faith, have dealt with or removed these minerals, prior to the commencement of the Act. Provision is made for persons not having an interest in these minerals to disturb them in the course of farming and other operations.

The other Act cited as "The Clay and Marl Act", declares clay and marl at the surface of land or which can be removed by surface stripping, are and always have been owned by the owner of the surface. This Act also applies to all lands in the Province. A section protects persons who in good faith removed clay or marl or granted a lease or other disposition prior to the commencement of the Act. Such lease or other disposition is not invalidated by the Act, but may not be renewed or otherwise extended.

Originally The Pipe Line Act, 1958, classified the pipe lines in the Province according to the function for which each is used. The pipe lines to which its provisions applied were those used in the movement of oil, gas and water. In anticipation of pipe line engineering advances which may make it possible to move other minerals by pipe line in solution, suspension or other state, the Act was amended to cover this class of pipe line.

An amendment to The Right of Entry Arbitration Act makes it clear that a mineral operator may go directly to the Department, or other body administering Crown land, for an agreement to use such land for mineral operations instead of only obtaining right of entry under the Act.

An amendment to The Oil and Gas Conservation Act will permit the increase of the licence fee from \$25.00 to \$50.00 for wells drilled for oil or gas or incidental to the production of oil or gas. Revenue from the increase in the fees may be used by the Oil and Gas Conservation Board for facilities for storing cores.

A separate report is issued yearly by the Mines Division and may be obtained from the Mines Division of this Department in the Natural Resources Building, Edmonton, Alberta.

Detailed reports of the other divisions follow.

All of which is respectfully submitted.

H. H. SOMERVILLE,
Deputy Minister.

October 16th, 1961.

MINERAL RIGHTS DIVISION

Report of the Director of Mineral Rights

J. W. PATRICK

The twelfth year of administration by the Department of Mines and Minerals was a busy year.

Footage drilled for petroleum and natural gas during 1960 was 10,149,097 feet. This was an increase of 1,339,553 feet from 1959. The production of crude oil increased to 132,865,217 barrels being an increase of 2,897,905 barrels from 1959. The number of producing wells increased from 9,216 to 9,878 and were capable of maintaining an average daily rate of production of 896,774 barrels at December 31, 1960, under good production practice in accordance with sound engineering and economic principles. Because of inadequate markets the average daily oil produced during the year was only 363,020 barrels, an increase of two per cent from the previous year. There were 1,606 licences issued to drill for oil or gas during 1960 compared with 1,727 licences during the previous year.

Production of coal in Alberta in 1960 decreased by 145,424 tons.

The production and value of Alberta's chief minerals for 1960 were crude oil, 132,865,217 barrels valued at \$312,921,060.00; coal, 2,404,093 tons valued at \$11,439,705.00; natural gas *352,703,640 Mcf., valued at \$28,216,291.20; and salt, 41,978 tons valued at \$1,485,705.00.

Mineral rights, solid, liquid and gaseous, the property of the Crown in right of the Province, are not sold, but are disposed of by lease, reservation, licence, permit or other agreement for limited periods of time. Revenue is obtained from fees, rentals, bonuses, royalties, sales of leases and other miscellaneous charges. During the fiscal year these sources provided a revenue of \$103,760,657.38 being a decrease of \$38,478,045.94 from the previous year. Sales of leases and reservations in Crown Reserves were held on four occasions in the fiscal year and the revenue from this source decreased 34 million dollars.

The Province is divided into two mining districts; the Edmonton district comprises that portion of the Province lying to the north of the north boundary of Township 42 and the balance of the Province lying to the south is contained in the Calgary district.

During the year 3,727 applications for mineral rights were filed at the office of the Mining Recorders in Edmonton and Calgary and at the office of the Department in Edmonton. Many inquiries were made as to the availability of mineral rights, mostly for petroleum and natural gas leases and reservations by personal application and by correspondence.

*Includes only marketed and consumed gas.

A tabulation of leases together with statement of business transacted follows.

MINERAL RIGHTS LEASES

Type of Lease	Active at April 1, 1960	Issued	Reinstated	Divided	Cancelled	Renewed	Active at March 31, 1961
Petroleum and Natural Gas	30,813	3,035	100	109	3,824	34	80,199
Natural Gas	467	97	—	2	2	—	564
Petroleum	4	1	—	—	—	—	5
Coal	448	17	—	—	31	1	433
Road Allowance Coal	136	2	—	—	2	—	136
Quarrying	79	20	—	—	11	—	88
Salt	2	—	—	—	—	—	2
Bituminous Sands	31	19	—	—	—	—	50
Iron	2	—	—	—	—	—	2
Miscellaneous	6	—	—	—	—	—	6
TOTAL	31,988	3,191	100	111	3,870	35	31,485

ACREAGE CONTAINED IN ABOVE LEASES

Type of Lease	Active at April 1, 1960	Issued	Reinstated	Cancelled	Renewed	Active at March 31, 1961
Petroleum and Natural Gas	27,943,654	4,582,107	85,863	4,360,718	5,176	28,245,730
Natural Gas	2,031,094	302,522	—	22,605	—	2,311,011
Petroleum	30,071	6,400	—	—	—	36,471
Coal	142,798	3,870	—	4,300	100	142,268
Quarrying	14,611	1,622	—	720	—	15,513
Salt	1,204	—	—	—	—	1,204
Bituminous Sands	717,852	781,496	—	—	—	1,499,348
Iron	442	—	—	—	—	442
Miscellaneous	3,806	—	—	—	—	3,806
TOTAL	30,885,532	5,678,017	85,863	4,388,343	5,276	32,255,798

STATEMENT OF BUSINESS TRANSACTED, 1960-1961

PETROLEUM AND NATURAL GAS

	Number	Acres
Leases issued	3,035	4,582,107
Leases cancelled and relinquished	3,824	4,360,718
Leases reinstated	100	85,863
Prospecting reservations granted	278	11,449,115
Prospecting reservations terminated	301	16,185,655
Crown reserve drilling reservations granted	97	740,601
Crown reserve drilling reservations terminated	122	905,700
Natural gas licences issued	23	357,923
Natural gas licences terminated	25	307,067
Crown reserve natural gas licences issued	19	401,710
Crown reserve natural gas licences terminated	17	233,997
Natural gas leases issued	97	302,522
Natural gas leases cancelled and relinquished	2	22,605
Petroleum leases issued	1	6,400
Fees, rentals, penalties and bonuses collected		\$30,898,834.06
Royalties collected		27,741,035.63
Crown reserve sales		44,127,513.03
TOTAL		\$102,767,382.72

COAL

	Number	Acres
Leases issued	17	8,870
Leases cancelled and relinquished	81	4,300
Road Allowance Leases—		
Leases issued	2	
Leases cancelled and relinquished	2	
Fees and rentals collected		\$ 48,840.26
Royalties collected		72,821.12
TOTAL		<u>\$121,661.38</u>

QUARRYING

Quarrying leases issued	20	1,622
Quarrying leases cancelled and relinquished	11	720
Fees and rentals collected		\$ 140.00
Royalties collected		57,095.90
TOTAL		<u>\$57,235.90</u>

MISCELLANEOUS

	Number
Bituminous sands leases issued	19
Bituminous sands permits terminated	48
Quartz—	
Claims recorded	15
Certificates of Work issued	65
Placer—	
Renewals issued	11
Iron prospecting permits issued	2
Sodium sulphate prospecting permits terminated	1
Mineral sales	18
Well licences issued	1,703
Geophysical licenses issued	126
Permits to operate geophysical equipment issued	16
Permits to operate geophysical equipment renewed	57
Fees, rentals royalties and miscellaneous charges	\$814,377.38

PETROLEUM AND NATURAL GAS

Leases—During the year 3,035 petroleum and natural gas leases were granted covering 4,582,107 acres and at the close of the fiscal year a total of 30,199 leases were in existence comprising an area of 28,245,730 acres.

The revenue received from fees amounted to \$34,679.60. The revenue from lease rentals was \$24,426,103.03 and the revenue from bonuses accepted by the Mining Recorders at sales of petroleum and natural gas leases by tender amounted to \$238,508.75. The revenue from penalties for deferment of drilling on petroleum and natural gas leases amounted to \$26,900.00.

Disposal of Crown Reserves—Petroleum and natural gas rights comprised in Crown reserves may be disposed of by order of the Lieutenant Governor in Council and during the year 241 leases, six reservations, 97 Crown reserve drilling reservations and eighteen Crown reserve natural gas licences were purchased and particulars of these Crown reserve purchases are included in this report. Particulars of Crown reserve fractional area leases purchased and Crown reserve natural gas leases purchased pursuant to Sections 280 and 282 of The Mines and Minerals Act are also included.

CROWN RESERVES PURCHASED IN ALHAMBRA AREA

Description	Offer Accepted From:	Cash Purchase Price
N. $\frac{1}{2}$'s 17 & 18 & S. $\frac{1}{2}$'s 19 & 20-42-6-5	Amerada Petroleum Corporation	\$ 149,243.76
S. $\frac{1}{2}$ & N.E. $\frac{1}{4}$	Canadian Homestead Oils Limited	33,797.00
Sec. 21-42-6-5	Midwest Oil Corporation and Peerless Oil & Gas Company	90,335.00
Sec. 22-42-6-5	Ashland Oil & Refining Company	21,000.00
W. $\frac{1}{2}$	Canadian Homestead Oils Limited	49,100.00
Sec. 14-42-6-5	Ashland Oil & Refining Company and Blair Oil Company	111,000.00
Sec. 15-42-6-5	American Climax Petroleum Corporation	34,471.61
N. $\frac{1}{2}$	Texaco Exploration Company	55,100.00
W. $\frac{1}{2}$		\$ 544,047.87

CROWN RESERVES PURCHASED IN CARSON CREEK NORTH AREA

Description	Offer Accepted From:	Cash Purchase Price
W. $\frac{1}{2}$	3-62-12-5 The British American Oil Company Limited	\$ 358,019.19
N. $\frac{1}{2}$	10-62-12-5 Canadian Kewanee Limited	101,150.11
S. $\frac{1}{2}$	10-62-12-5 The British American Oil Company Limited	358,019.19
		\$ 817,188.49

CROWN RESERVES PURCHASED IN EWING LAKE AREA

Description	Offer Accepted From:	Cash Purchase Price
Sec. 24-37-21-4	Edwin Foster Blair, The British American Oil Company Limited, Altair Oil & Gas Co. and Ashland Oil & Refining Company	\$ 56,078.91
		\$ 56,078.91

CROWN RESERVES PURCHASED IN GARRINGTON AREA

Description	Offer Accepted From:	Cash Purchase Price
N.E. $\frac{1}{4}$	26-34- 4-5 Canada-Cities Service Petroleum Corporation	\$ 4,159.99
Sec. 36-34- 4-5	Canada-Cities Service Petroleum Corporation	40,703.97
		\$ 44,863.96

CROWN RESERVES PURCHASED IN GILBY AREA

Description	Offer Accepted From:	Cash Purchase Price
N. $\frac{1}{2}$	11-41- 3-5 French Petroleum Company of Canada Ltd.	\$ 85,276.76
		\$ 85,276.76

CROWN RESERVES PURCHASED IN HAMILTON LAKE AREA

Description	Offer Accepted From:	Cash Purchase Price
E. $\frac{1}{2}$	7-35- 9-4 Colorado Oil and Gas Ltd.	\$ 7,900.65
E. $\frac{1}{2}$	25-35-10-4 Colorado Oil and Gas Ltd.	3,900.65
		\$ 11,801.30

CROWN RESERVES PURCHASED IN HESPERO AREA

Description	Offer Accepted From:	Cash Purchase Price
E. $\frac{1}{2}$	34-38- 3-5 Imperial Oil Limited	\$ 16,429.64
		\$ 16,429.64

CROWN RESERVES PURCHASED IN JUDY CREEK AREA

Description	Offer Accepted From:	Cash Purchase Price
E. $\frac{1}{4}$	22-63-11-5 Imperial Oil Limited	\$ 676,235.26
W. $\frac{1}{2}$	22-63-11-5 Imperial Oil Limited	451,345.45
E. $\frac{1}{4}$	21-63-11-5 Imperial Oil Limited	101,565.65
W. $\frac{1}{2}$	9-64-11-5 Imperial Oil Limited	307,545.65
E. $\frac{1}{2}$	9-64-11-5 Imperial Oil Limited	555,676.76
		\$ 2,092,368.87

CROWN RESERVES PURCHASED IN LEDUC AREA

Description	Offer Accepted From:	Cash Purchase Price
N.W. $\frac{1}{4}$ 11-50-26-4	Paul A. Rothwell	\$ 10,127.18
W. $\frac{1}{2}$ 14-50-26-4	Paul A. Rothwell	10,127.18
N.E. $\frac{1}{4}$ 36-50-27-4	Transalta Minerals Ltd.	1,738.56
		<hr/> \$ 21,992.92

CROWN RESERVES PURCHASED IN NEVIS AREA

Description	Offer Accepted From:	Cash Purchase Price
E. $\frac{1}{2}$ 28-39-22-4 (Except Natural Gas in the Nisku-Leduc Zone)	Colorado Oil and Gas Ltd.	\$ 4,900.65
		<hr/> \$ 4,900.65

CROWN RESERVES PURCHASED IN PEMBINA AREA

Description	Offer Accepted From:	Cash Purchase Price
S. $\frac{1}{2}$ & N.W. $\frac{1}{4}$ 5-50- 6-5	Swain Oils Ltd.	\$ 104,512.00
N. $\frac{1}{2}$ 6-50- 6-5	Supertest Petroleum Corporation Limited	96,600.00
S. $\frac{1}{2}$ 6-50- 6-5	Whitehall Canadian Oils Ltd. and Tricentral Oils Limited	144,444.00
W. $\frac{1}{2}$ 5-50- 7-5	Pan American Petroleum Corporation, Honolulu Oil Corporation and Pacific Petroleum Ltd.	323,520.00
S. $\frac{1}{2}$ & N.W. $\frac{1}{4}$ 11-50- 7-5	Pan American Petroleum Corporation, Honolulu Oil Corporation and Pacific Petroleum Ltd.	553,797.00
W. $\frac{1}{2}$ 18-50- 7-5 (Except Natural Gas in Blairmore Zone)	Pan American Petroleum Corporation, Honolulu Oil Corporation and Pacific Petroleum Ltd.	341,440.00
N. $\frac{1}{2}$ 31-46- 8-5	Swain Oils Ltd.	32,170.00
S.W. $\frac{1}{4}$ 5 & S.E. $\frac{1}{4}$ 6-47- 8-5	Swain Oils Ltd.	32,170.00
W. $\frac{1}{2}$ & N.E. $\frac{1}{4}$ 13-50- 8-5 (Except Natural Gas in Blairmore Zone)	Pan American Petroleum Corporation, Honolulu Oil Corporation and Pacific Petroleum Ltd.	507,654.00
Sec. 34-49-11-5	Skelly Oil Company and Canadian Kewanee Limited	145,515.72
Sec. 1-50-11-5	Skelly Oil Company and Canadian Kewanee Limited	41,152.00
S. $\frac{1}{2}$ 2 & S. $\frac{1}{2}$ 3-50-11-5	Skelly Oil Company and Canadian Kewanee Limited	145,062.40
Sec. 12-50-11-5	Skelly Oil Company and Canadian Kewanee Limited	51,136.00
W. $\frac{1}{2}$ 32-50-11-5	Canada-Cities Service Petroleum Corporation	13,146.00
E. $\frac{1}{2}$ 36-50-11-5	Canada-Cities Service Petroleum Corporation	8,138.00
S. $\frac{1}{2}$ 6-48- 2-5	Whitehall Canadian Oils Ltd., Tricentral Oils Limited, Westburne Oil Development Limited and Abilene Oil Enterprises Ltd.	30,300.00
Sec. 36-47- 3-5	Whitehall Canadian Oils Ltd., Tricentral Oils Limited, Westburne Oil Development Limited and Abilene Oil Enterprises Ltd.	68,500.00
S. $\frac{1}{2}$ 2-48- 3-5	Whitehall Canadian Oils Ltd., Tricentral Oils Limited, Westburne Oil Development Limited and Abilene Oil Enterprises Ltd.	55,100.00
Sec. 20 & S. $\frac{1}{2}$ 29-49- 5-5	Consolidated Mic Mac Oils Ltd., Ashland Oil & Refining Company and Mayfair Oil & Gas Ltd.	42,000.00
W. $\frac{1}{2}$ 15-48- 6-5	Consolidated Mic Mac Oils Ltd., Ashland Oil & Refining Company and Mayfair Oil & Gas Ltd.	66,000.00
Sec. 21-49- 6-5	Consolidated Mic Mac Oils Ltd., Ashland Oil & Refining Company and Mayfair Oil & Gas Ltd.	226,000.00
N.E. $\frac{1}{4}$ 26 & S. $\frac{1}{2}$ 35-49- 6-5	United Producing Company Inc.	180,101.00
N. $\frac{1}{4}$ 34-49-6-5 & S. $\frac{1}{2}$ s 3 & 4-50-6-5	Pan American Petroleum Corporation	241,138.18
S. $\frac{1}{2}$ 7-50- 6-5	Champlin Oil & Refining Co.	159,000.00
S. $\frac{1}{2}$ 12-50- 7-5	Champlin Oil & Refining Co.	236,800.00
W. $\frac{1}{2}$ 19-50- 7-5 (Except Natural Gas in Blairmore Zone)	Skelly Oil Company	209,040.00
E. $\frac{1}{2}$ 24-50- 8-5 (Except Natural Gas in Blairmore Zone)	Skelly Oil Company	224,905.50
Sec. 33-49-11-5	Skelly Oil Company and Canadian Kewanee Limited	138,882.00
S. $\frac{1}{2}$ 4-50-11-5	Skelly Oil Company and Canadian Kewanee Limited	76,840.00

CROWN RESERVES PURCHASED IN PEMBINA AREA

Description		Offer Accepted From	Cash Purchase Price
N. $\frac{1}{2}$	35-49- 6-5	Pan American Petroleum Corporation and United Producing Company Inc.	32,554.20
W. $\frac{1}{2}$	18-50- 8-5	Whitehall Canadian Oils Ltd. and Tricentrol Oils Limited	51,100.00
W. $\frac{1}{2}$ 13 &			
E. $\frac{1}{2}$	14-50- 9-5	Skelly Oil Company	358,400.00
S.W. $\frac{1}{4}$	14-50- 9-5	Sun Oil Company	128,640.00
S.W. $\frac{1}{4}$ 27 &			
S. $\frac{1}{2}$	28-50- 9-5	Canada—Cities Service Petroleum Corporation	106,338.00
W. $\frac{1}{2}$	32-47- 2-5	Whitehall Canadian Oils Ltd., Tricentrol Oils Limited, Westburne Oil Development Limited and Abilene Oil Enterprises Ltd.	4,700.00
W. $\frac{1}{2}$	5-48- 2-5	Whitehall Canadian Oils Ltd., Tricentrol Oils Limited, Westburne Oil Development Limited and Abilene Oil Enterprises Ltd.	10,800.00
S. $\frac{1}{2}$	11-48- 3-5	Whitehall Canadian Oils Ltd., Tricentrol Oils Limited, Westburne Oil Development Limited and Abilene Oil Enterprises Ltd.	35,500.00
Sec.	12-48- 3-5	Whitehall Canadian Oils Ltd., Tricentrol Oils Limited, Westburne Oil Development Limited and Abilene Oil Enterprises Ltd.	47,100.00
N. $\frac{1}{2}$	16-50- 9-5	Canada—Cities Service Petroleum Corporation	67,519.97
S. $\frac{1}{2}$	29-50- 9-5	Wintershell Oil of Canada Ltd. and Texfel Petroleum Corporation	420,200.00
			<hr/> \$ 5,756,915.97

CROWN RESERVES PURCHASE IN SWAN HILLS AREA

Description		Offer Accepted From:	Cash Purchase Price
E. $\frac{1}{2}$	30-65-10-5	Pan American Petroleum Corporation and The British American Oil Company Limited	\$ 677,111.12
W. $\frac{1}{2}$	30-65-10-5	Pan American Petroleum Corporation and The British American Oil Company Limited	1,000,111.12
E. $\frac{1}{2}$	8-66-10-5	The Atlantic Refining Company	51,010.10
S. $\frac{1}{2}$	17-66-10-5	Pan American Petroleum Corporation and The British American Oil Company Limited	462,111.12
E. $\frac{1}{2}$	18-66-10-5	Western Decalta Petroleum Limited and Westburne Oil Development Limited	768,432.00
W. $\frac{1}{2}$	18-66-10-5	Pan American Petroleum Corporation and The British American Oil Company Limited	230,111.12
E. $\frac{1}{2}$	25-65-11-5	Pan American Petroleum Corporation and The British American Oil Company Limited	919,111.12
W. $\frac{1}{2}$	25-65-11-5	Pan American Petroleum Corporation and The British American Oil Company Limited	780,111.12
E. $\frac{1}{2}$	26-65-11-5	Pan American Petroleum Corporation and The British American Oil Company Limited	606,111.12
E. $\frac{1}{2}$	13-66-11-5	The Pure Oil Company	225,000.00
W. $\frac{1}{2}$	13-66-11-5	The Pure Oil Company	225,000.00
E. $\frac{1}{2}$	14-66-11-5	Pan American Petroleum Corporation and The British American Oil Company Limited	100,111.12
W. $\frac{1}{2}$	5-65-10-5	Pan American Petroleum Corporation and The British American Company Limited	545,161.60
N. $\frac{1}{2}$	6-65-10-5	Pan American Petroleum Corporation and The British American Oil Company Limited	641,161.60
E. $\frac{1}{2}$	8-65-10-5	Pan American Petroleum Corporation and The British American Oil Company Limited	160,161.60
E. $\frac{1}{2}$	7-67-10-5	Pan American Petroleum Corporation and The British American Oil Company Limited	901,001.60
W. $\frac{1}{2}$	7-67-10-5	Amerada Petroleum Corporation	653,307.73
N. $\frac{1}{2}$	1-65-11-5	Pan American Petroleum Corporation and The British American Oil Company Limited	351,281.60
E. $\frac{1}{2}$	2-65-11-5	Pan American Petroleum Corporation and The British American Oil Company Limited	110,281.60
S. $\frac{1}{2}$	6-65-10-5	Pan American Petroleum Corporation and The British American Oil Company Limited	336,011.50
W. $\frac{1}{2}$	29-65-10-5	Pan American Petroleum Corporation and The British American Oil Company Limited	552,011.50
E. $\frac{1}{2}$	32-65-10-5	Pan American Petroleum Corporation	128,038.00
S. $\frac{1}{2}$	1-65-11-5	Pan American Petroleum Corporation and The British American Oil Company Limited	176,011.50
W. $\frac{1}{2}$	23-65-11-5	Pan American Petroleum Corporation	332,838.00
W. $\frac{1}{2}$	9-65-10-5	Medallion Petroleum Limited	238,325.00
E. $\frac{1}{2}$	17-65-10-5	Medallion Petroleum Limited	238,326.00
E. $\frac{1}{2}$	20-65-10-5	Pan American Petroleum Corporation and The British American Oil Company Limited	256,010.18
E. $\frac{1}{2}$	29-65-10-5	Pan American Petroleum Corporation and The British American Oil Company Limited	324,810.18
W. $\frac{1}{2}$	33-65-10-5	Pan American Petroleum Corporation and The British American Oil Company Limited	88,010.18
E. $\frac{1}{2}$	14-67-10-5	Amurex Oil Company	534,337.00
E. $\frac{1}{2}$	23-67-10-5	Mobil Oil of Canada, Ltd.	647,447.00
E. $\frac{1}{2}$	26-67-10-5	Amurex Oil Company	416,326.00
E. $\frac{1}{2}$	36-67-11-5	Amerada Petroleum Corporation	101,702.67
			<hr/> \$ 13,776,893.10

CROWN RESERVES PURCHASED IN VIRGINIA HILLS AREA

Description	Offer Accepted From:	Cash Purchase Price
Sec. 30-64-13-5	Skelly Oil Company	\$ 40,320.00
W. $\frac{1}{2}$ 32-64-13-5	Skelly Oil Company	11,840.00
Sec. 21-64-13-5	Shell Oil Company of Canada, Limited	159,975.75
Sec. 22-64-13-5	Shell Oil Company of Canada, Limited	579,995.95
E. $\frac{1}{2}$ 5-65-13-5	The Atlantic Refining Company	33,043.53
W. $\frac{1}{2}$ 5-65-13-5	Hudson's Bay Oil and Gas Company Limited, Union Oil Company of California and Home Oil Company Limited	80,150.40
		<hr/>
		\$ 855,325.63

CROWN RESERVES PURCHASED ELSEWHERE IN ALBERTA

Description	Offer Accepted From:	Cash Purchase Price
W. $\frac{1}{2}$ 6-13-18-4	Bailey Selburn Oil & Gas Ltd.	\$ 4,169.97
E. $\frac{1}{2}$ 7-13-18-4	Bailey Selburn Oil & Gas Ltd.	4,169.97
E. $\frac{1}{2}$ 18-13-18-4	Home Oil Company Limited	3,206.40
S. $\frac{1}{2}$ & N.W. $\frac{1}{4}$ 32-35-25-4	North Canadian Oils Limited	12,700.00
E. $\frac{1}{2}$ 29-28-2-5 (Except Natural Gas in Elkton Zone)	Canadian Oil Companies, Limited	17,870.00
Sec. 32-28-2-5 (Except Natural Gas in Elkton Zone)	Bailey Selburn Oil & Gas Ltd.	78,500.01
W. $\frac{1}{2}$ 4-29-2-5 (Except Natural Gas in Elkton Zone)	Canadian Oil Companies, Limited	11,971.00
Sec. 6-29-2-5 (Except Natural Gas in Elkton Zone)	Bailey Selburn Oil & Gas Ltd.	50,487.87
N.E. $\frac{1}{4}$ 36-31-4-5 (Except Natural Gas in Turner Valley Zone)	Shell Oil Company of Canada, Limited and Canadian Superior Oil of California, Ltd.	55,102.02
Sec. 22-32-4-5 (Except out of N.W. $\frac{1}{4}$ of said Sec. 22 Natural Gas in Elkton Zone)	Amerada Petroleum Corporation	49,062.40
Sec. 28-32-4-5 (Except Natural Gas in Elkton Zone)	Amerada Petroleum Corporation	49,062.40
S.E. $\frac{1}{4}$ 32-32-4-5	Amerada Petroleum Corporation	12,265.60
S.E. $\frac{1}{4}$ 36-32-4-5	Shell Oil Company of Canada, Limited and Canadian Superior Oil of California, Ltd.	25,052.12
S.W. $\frac{1}{4}$ 4-27-5-5	Shell Oil Company of Canada, Limited	16,777.77
Sec. 22-34-5-5	Canadian Homestead Oils Limited, Arrowhead Exploration Company Ltd. and Bryan Watson Payne	72,700.00
Sec. 31-64-13-5	Skelly Oil Company	356,972.80
Sec. 11-65-13-5	Hudson's Bay Oil and Gas Company Limited	950,662.40
Sec. 14-65-13-5	Hudson's Bay Oil and Gas Company Limited	100,659.20
Sec. 1-65-14-5	Skelly Oil Company	81,772.80
E. $\frac{1}{2}$ 21-81-15-5	Richfield Oil Corporation	8,846.40
Sec. 14-62-26-5	Shell Oil Company of Canada, Limited	51,111.11
Sec. 23-62-26-5	Shell Oil Company of Canada, Limited	\$ 123,333.33
N.W. $\frac{1}{4}$ 27 & S.W. $\frac{1}{4}$ 34-62-26-5	Shell Oil Company of Canada, Limited	30,611.11
N. $\frac{1}{2}$ 28 & S. $\frac{1}{2}$ 33-62-26-5	Shell Oil Company of Canada, Limited	30,611.11
S.E. $\frac{1}{4}$ 29-31-17-4	Phillips Petroleum Company	1,600.00
S.E. $\frac{1}{4}$ 32-31-17-4	Phillips Petroleum Company	1,600.00
S. $\frac{1}{2}$ 5-32-17-4	Phillips Petroleum Company	3,200.00
Sec. 6-37-20-4	The British American Oil Company Limited	20,022.44
Sec. 29-36-22-4	Choqua Oil Co. Ltd.	27,733.12
W. $\frac{1}{2}$ 4-47-22-4	Mid Western Industrial Gas Ltd. and Imperial Oil Limited	9,858.00
Sec. 13-30-24-4	Great Plains Development Company of Canada, Ltd.	6,508.58
S. $\frac{1}{2}$ 2-49-26-4	Pan American Petroleum Corporation	3,971.20
Sec. 32-26-1-5	French Petroleum Company of Canada Ltd.	50,276.76
Sec. 18-29-2-5 (Except Natural Gas in Elkton Zone)	French Petroleum Company of Canada Ltd.	82,276.76
W. $\frac{1}{2}$ 25 & N.E. $\frac{1}{4}$ 26-43-2-5	Western Decalta Petroleum Limited	4,825.00

CROWN RESERVES PURCHASED ELSEWHERE IN ALBERTA

(Continued)

Description	Offer Accepted From	Cash Purchase Price
Sec. 36-43- 2-5	Western Decalta Petroleum Limited, Dome Petroleum Limited, West Canadian Oil & Gas Limited and Consolidated East Crest Oil Company Limited	\$ 6,435.00
N.E. $\frac{1}{4}$ 24-29- 3-5	French Petroleum Company of Canada Ltd.	32,281.56
Sec. 11-30- 3-5	Canadian Oil Companies Limited and Security Freehold Petroleum Limited	6,852.00
N. $\frac{1}{2}$ 34-39- 3-5	Richfield Oil Corporation	22,000.00
S.E. $\frac{1}{4}$ 34-39- 3-5	Richfield Oil Corporation	21,000.00
S. $\frac{1}{2}$ 10-40- 3-5	Canadian Superior Oil of California, Ltd.	15,321.00
S. $\frac{1}{2}$ 11-40- 3-5	Arrowhead Exploration Company Ltd. and McAlester Canadian Oil Company	73,622.00
Sec. 2-47- 6-5	Pan American Petroleum Corporation	32,262.30
Sec. 27 & E. $\frac{1}{2}$ 28-41- 7-5	Amerada Petroleum Corporation	74,619.79
E. $\frac{1}{2}$ 33 & W. $\frac{1}{2}$ 34-41- 7-5	Amerada Petroleum Corporation	65,822.46
Sec. 16-68-10-5	Kern County Land Company	244,350.00
Sec. 21-68-10-5	Kern County Land Company	224,350.00
Sec. 30-68-10-5	Canadian Kewanee Limited	251,150.00
N. $\frac{1}{2}$ 11-63-12-5	Imperial Oil Limited	111,866.66
S. $\frac{1}{2}$ 11-63-12-5	Imperial Oil Limited	55,645.45
E. $\frac{1}{2}$ 27-63-12-5	Canadian Kewanee Limited	25,000.00
W. $\frac{1}{2}$ 27-63-12-5	Imperial Oil Limited	41,255.55
W. $\frac{1}{2}$ 28-36-22-4	Shell Oil Company of Canada, Limited	15,597.95
Sec. 36-33-23-4	Mobil Oil of Canada, Ltd.	18,156.80
Sec. 22-34-23-4	Mobil Oil of Canada, Ltd.	18,156.80
S. $\frac{1}{2}$ & N.W. $\frac{1}{4}$ 30-58-24-4 (Except Natural Gas in Viking Zone)	Bailey Selburn Oil & Gas Ltd.	19,243.97
W. $\frac{1}{2}$ 35-60-24-4	Shell Oil Company of Canada, Limited	3,295.95
N.W. $\frac{1}{4}$ 17 & S. $\frac{1}{2}$ 20-61-24-4	Shell Oil Company of Canada, Limited	4,909.75
Sec. 18-62-24-4	Shell Oil Company of Canada, Limited	6,495.75
E. $\frac{1}{2}$ 28-38-27-4	The California Standard Company	5,000.00
N.W. $\frac{1}{4}$ 30-38-27-4	The California Standard Company	1,800.00
S.E. $\frac{1}{4}$ 30-38-27-4	Transalta Minerals Ltd.	3,046.46
N. $\frac{1}{2}$ 12-23-29-4	Canadian Oil Companies, Limited	3,430.00
S.E. $\frac{1}{4}$ 14-23-29-4 (Except Railway right of way)	Canadian Oil Companies, Limited	1,800.83
N.W. $\frac{1}{4}$ 14-23-29-4 (Except Railway right of way)	Canadian Oil Companies, Limited	2,104.28
N. $\frac{1}{2}$ & S.E. $\frac{1}{4}$ 29-32- 4-5 (Except the Mississippian Formation)	Amerada Petroleum Corporation	73,588.80
Sec. 16-34- 4-5	Canadian Homestead Oils Limited	26,250.00
S.W. $\frac{1}{4}$ 3-45- 5-5	Amerada Petroleum Corporation	16,500.50
S. $\frac{1}{2}$ 15-63-12-5	Imperial Oil Limited	40,411.14
N.W. $\frac{1}{4}$ 31-68-15-5	Imperial Oil Limited	9,712.20
W. $\frac{1}{2}$ 36-68-16-5	Canadian Husky Oil Ltd., Bailey Selburn Oil & Gas Ltd., Colorado Oil and Gas Ltd. and Dome Petroleum Limited	20,492.80
and E. $\frac{1}{2}$ 1-69-16-5		
N.W. $\frac{1}{4}$ 16, N.E. $\frac{1}{4}$ 17, S.E. $\frac{1}{4}$ 20 & S.W. $\frac{1}{4}$ 21	Imperial Oil Limited	19,416.20
69-15-5		
N. $\frac{1}{2}$'s 7 and 8-65-16-5	Triad Oil Co. Ltd. and Sohio Petroleum Company	25,672.72
E. $\frac{1}{2}$ 18-68-16-5	Canadian Husky Oil Ltd., Bailey Selburn Oil & Gas Ltd., Colorado Oil and Gas Ltd. and Dome Petroleum Limited	10,246.40
S. $\frac{1}{2}$ 5-65-17-5	French Petroleum Company of Canada Ltd.	18,502.80
E. $\frac{1}{2}$ 32-66-17-5	The Atlantic Refining Company	10,666.60
S. $\frac{1}{2}$'s 34 and 35-66-17-5	Triad Oil Co. Ltd. and Sohio Petroleum Company	25,648.48
S. $\frac{1}{2}$ & N.E. $\frac{1}{4}$ 36-66-17-5	Triad Oil Co. Ltd. and Sohio Petroleum Company	19,266.66
Sec. 11 and W. $\frac{1}{2}$ 12 68-17-5	Triad Oil Co. Ltd. and Sohio Petroleum Company	38,442.42
E. $\frac{1}{2}$ 34-68-17-5	Canadian Husky Oil Ltd., Bailey Selburn Oil & Gas Ltd., Colorado Oil and Gas Ltd. and Dome Petroleum Limited	10,246.40
N.W. $\frac{1}{4}$ 25, N. $\frac{1}{2}$ 26, N.E. $\frac{1}{4}$ 27, S.E. $\frac{1}{4}$ 34, S. $\frac{1}{2}$ 35 & S.W. $\frac{1}{4}$ 36-69-17-5	Montreal Trust Company	38,681.60

CROWN RESERVES PURCHASED ELSEWHERE IN ALBERTA

(Continued)

Description	Offer Accepted From	Cash Purchase Price
S.W. $\frac{1}{4}$ Sec. 23 and N. $\frac{1}{2}$	27-69-17-5 Montreal Trust Company	\$ 4,835.20
	26-67-18-5 Imperial Oil Limited	97,356.86
	11-68-18-5 Canadian Fina Oil Limited, Calvan Consolidated Oil & Gas Company Limited and Western Leaseholds Ltd.	11,637.00
Sec. S. $\frac{1}{2}$ and N.W. $\frac{1}{4}$	12-37-21-4 The Ohio Oil Company	129,112.00
W. $\frac{1}{2}$	32-40-21-4 Imperial Oil Limited	24,339.39
S. $\frac{1}{2}$	18-56-21-4 Nairb Petroleum Ltd.	3,517.98
Sec.	12-56-22-4 Nairb Petroleum Ltd.	10,219.97
S. $\frac{1}{2}$	32-15-24-4 Michigan Wisconsin Pipe Line Company	6,598.40
N.E. $\frac{1}{4}$	30-44-26-4 Sun Oil Company	3,881.60
E. $\frac{1}{2}$	8-54-26-4 Western Decalta Petroleum Limited	1,830.00
W. $\frac{1}{2}$	6- 1-27-4 The California Standard Company	11,127.39
W. $\frac{1}{2}$	24-44-27-4 Sun Oil Company	3,881.60
W. $\frac{1}{2}$	25-44-27-4 Sun Oil Company	3,881.60
W. $\frac{1}{2}$	36-44-27-4 Sun Oil Company	3,881.60
S. $\frac{1}{2}$	14- 1-28-4 The California Standard Company	11,127.39
N.W. $\frac{1}{4}$ & L.S.'s 3, 4 & 5,	12-20-29-4 Texaco Exploration Company	7,000.00
Sec.	22- 5- 1-5 The California Standard Company	29,417.28
Sec.	18- 6- 1-5 The California Standard Company	29,417.28
S. $\frac{1}{2}$	4-26- 1-5 Transalta Minerals Ltd.	3,917.00
E. $\frac{1}{2}$	30-26- 1-5 Canadian Homestead Oils Limited and Canadian High Crest Oils Limited	3,500.00
W. $\frac{1}{2}$	6-27- 1-5 Canadian Homestead Oils Limited and Canadian High Crest Oils Limited	10,700.00
S. $\frac{1}{2}$ & N.W. $\frac{1}{4}$	30-34- 3-5 Canada-Cities Service Petroleum Corporation	22,079.96
N.E. $\frac{1}{4}$	26-38- 3-5 Imperial Oil Limited	8,165.47
Sec.	36-38- 3-5 Imperial Oil Limited	32,787.89
E. $\frac{1}{2}$	24-34- 4-5 Canada-Cities Service Petroleum Corporation	18,239.96
S. $\frac{1}{2}$	31-68-10-5 Canadian Kewanee Limited	67,011.12
Sec.	13-68-11-5 Medallion Petroleum Limited	117,612.00
Sec.	24-68-11-5 Medallion Petroleum Limited	117,612.00
N. $\frac{1}{2}$ 35 & N. $\frac{1}{2}$	36-68-11-5 Canadian Kewanee Limited	67,011.12
Sec.	2-65-14-5 L-M Oil Company Ltd. and Monsanto Chemical Company	121,600.00
N.W. $\frac{1}{4}$ 17 & N.E. $\frac{1}{4}$	18-55-16-5 The California Standard Company	6,517.28
E. $\frac{1}{2}$	19-55-16-5 The California Standard Company	10,217.76
W. $\frac{1}{2}$	20-55-16-5 The California Standard Company	6,637.89
S.W. $\frac{1}{4}$ 29 & S.E. $\frac{1}{4}$	30-55-16-5 Pan American Petroleum Corporation	3,907.22
Sec.	17-64-16-5 The Atlantic Refining Company	28,878.78
Sec.	3-65-16-5 The Atlantic Refining Company	28,878.78
N. $\frac{1}{2}$ 5 & N. $\frac{1}{2}$	6-66-17-5 The Atlantic Refining Company	28,878.78
W. $\frac{1}{2}$	18-69-18-5 West Canadian Oil & Gas Limited and Western Decalta Petroleum Ltd.	11,000.00
E. $\frac{1}{2}$	13-69-19-5 West Canadian Oil & Gas Limited and Western Decalta Petroleum Ltd.	11,000.00
W. $\frac{1}{2}$	28-70-19-5 Imperial Oil Limited	16,179.35
E. $\frac{1}{2}$	29-70-19-5 Imperial Oil Limited	16,252.73
W. $\frac{1}{2}$	18-59-20-5 West Canadian Oil and Gas Limited, Western Decalta Petroleum Ltd. and Texas Pacific Coal and Oil Company	20,000.00
N. $\frac{1}{2}$ & S.W. $\frac{1}{4}$	19-59-20-5 Crown Trust Company	56,327.18
Sec.	30-59-20-5 Mobil Oil of Canada, Ltd.	87,151.13
E. $\frac{1}{2}$	4-65-20-5 West Canadian Oil and Gas Limited and Western Decalta Petroleum Ltd.	11,680.00
S. $\frac{1}{2}$	8-65-20-5 The Atlantic Refining Company	9,738.48
N. $\frac{1}{2}$ 32 & N. $\frac{1}{2}$	33-85-21-5 Shell Oil Company of Canada, Limited	35,021.11
S. $\frac{1}{2}$ 4 & S. $\frac{1}{2}$	5-86-21-5 Shell Oil Company of Canada, Limited	35,166.66
Sec.	6-86-21-5 Shell Oil Company of Canada, Limited	35,085.85
Sec.	29-63-25-5 Shell Oil Company of Canada, Limited	10,503.33
S. $\frac{1}{2}$	24-74- 1-6 Western Decalta Petroleum Limited, Scurry-Rainbow Oil Limited, Consolidated East Crest Oil Company Limited and United Canso Oil & Gas Ltd.	19,672.00
Sec.	31-72- 3-6 Pan American Petroleum Corporation	13,574.42
Sec.	36-72- 4-6 Pan American Petroleum Corporation	13,574.42
Sec.	1-73- 4-6 Pan American Petroleum Corporation	13,574.42

\$ 5,707,378.91

PETROLEUM AND NATURAL GAS RESERVATIONS PURCHASED IN PROVINCIAL RESERVES

Description:	Offer Accepted From:	Cash Purchase Price
Comprising 52,440 acres in townships 65, 66, 67 and 68, range 24, west of the 4th meridian and located in Big Bend Provincial Reserve.	Canadian Husky Oil Ltd.	\$ 6,030.60
Comprising 99,840 acres in townships 91 and 92, ranges 7 and 8, west of the 6th meridian and in township 91, range 9, west of the 6th meridian and located in Clear Hills Provincial Reserve.	Shell Oil Company of Canada, Limited	132,975.75
Comprising 19,840 acres in townships 3 and 4, range 11, west of the 4th meridian and located in Lucky Strike Provincial Reserve.	Canadian Fina Oil Limited, Canadian Superior Oil of California Ltd. and The Calgary & Edmonton Corporation Limited	14,880.00
Comprising 91,400 acres in townships 12 and 13, ranges 11 and 12, west of the 4th meridian and located in Grand Forks Provincial Reserve.	The British American Oil Company Limited	110,594.77
Comprising 90,758 acres in townships 73 and 74, range 26, west of the 4th meridian and in townships 73 and 74, range 1, west of the 5th meridian and located in Marten Hills Provincial Reserve.	Pan American Petroleum Corporation	102,556.56
Comprising 80,072 acres in townships 75 and 76, range 26, west of the 4th meridian and in townships 75 and 76, range 1, west of the 5th meridian and located in Marten Hills Provincial Reserve.	Pan American Petroleum Corporation	250,625.38
		\$ 617,663.06

CROWN RESERVE DRILLING RESERVATIONS PURCHASED

Description:	Offer Accepted From:	Cash Purchase Price
Comprising 5,120 acres in townships 18 and 19, range 1, west of the 4th meridian - Jefferson formation - eight quarter sections.	Michigan Wisconsin Pipe Line Company	\$ 14,221.80
Comprising 6,400 acres in townships 15 and 16, range 20, west of the 4th meridian and in townships 16, range 21, west of the 4th meridian - Shunda formation of the Rundle group - nine quarter sections.	Plymouth Oil Company	26,280.00
Comprising 7,840 acres in townships 36 and 37, range 27, west of the 4th meridian and in townships 35 and 36, range 28, west of the 4th meridian - the Leduc formation of the Woodbend group - twelve quarter sections.	Devon-Palmer Oil Ltd. (No Personal Liability) and Renwar Oil Corporation	67,527.78
Comprising 8,320 acres in townships 36 and 37, ranges 2 and 3, west of the 5th meridian - Pekisko formation - twelve quarter sections.	Champlin Oil & Refining Co. and Anderson-Prichard Oil Corporation	187,690.25
Comprising 10,880 acres in townships 9, 10 and 11, range 3, west of the 5th meridian - Rundle group - sixteen quarter sections.	Texaco Exploration Company	285,111.17
Comprising 6,392 acres in townships 51 and 52, range 3, west of the 5th meridian - Banff formation - nine quarter sections.	Canadian Pacific Oil and Gas Limited	14,848.00
Comprising 8,320 acres in townships 37 and 38, range 5, west of the 5th meridian - Shunda formation of the Rundle group - twelve quarter sections.	Home Oil Company Limited, Alminex Limited, North Star Oil Limited, The Calgary & Edmonton Corporation Limited and Kern County Land Company	175,256.70
Comprising 8,320 acres in townships 40 and 41, range 5, west of the 5th meridian and in township 41, range 6, west of the 5th meridian - Mississippian twelve quarter sections.	Swain Oils Limited	81,670.00

CROWN RESERVE DRILLING RESERVATIONS PURCHASED

(Continued)

	Offer Accepted From:	Cash Purchase Price
Comprising 9,760 acres in township 38, ranges 9 and 10, west of the 5th meridian and in township 39, range 10, west of the 5th meridian - Shunda formation of the Rundle group - sixteen quarter sections.	Alminex Limited, Royalite Oil Company Limited, Medallion Petroleum Limited and Supertest Petroleum Corporation, Limited	\$ 161,600.00
Comprising 8,320 acres in township 71, range 10, west of the 5th meridian - Precambrian granite - twelve quarter sections.	Midwest Oil Corporation, Imperial Oil Limited, Pacific Petroleum Ltd., Honolulu Oil Corporation, Bailey Selburn Oil & Gas Ltd., Peerless Oil & Gas Company and Guyer Oil Company, Ltd.	33,734.40
Comprising 9,920 acres in townships 72 and 73, range 24, west of the 5th meridian - Precambrian granite - sixteen quarter sections.	Canada-Cities Service Petroleum Corporation	36,198.40
Comprising 7,040 acres in townships 35 and 36, range 8, west of the 4th meridian and in township 35, range 9, west of the 4th meridian - Elk Point group - ten quarter sections.	Altair Oil & Gas Co. and Katex Oil Company	38,720.00
Comprising 5,120 acres in townships 35 and 36, ranges 9 and 10, west of the 4th meridian - Paleozoic sediments - seven quarter sections.	Altair Oil & Gas Co. and Katex Oil Company	23,040.00
Comprising 6,201 acres in townships 45 and 46, ranges 16 and 17, west of the 4th meridian - Leduc formation of the Woodbend group - nine quarter sections.	Honolulu Oil Corporation	18,090.00
Comprising 5,440 acres in township 59, range 20, west of the 4th meridian and in townships 58 and 59, range 21, west of the 4th meridian - Beaverhill Lake formation - eight quarter sections.	Canadian Oil Companies, Limited	21,540.00
Comprising 11,400 acres in townships 21 and 22, ranges 4 and 5, west of the 5th meridian - Rundle group - sixteen quarter sections.	Pan American Petroleum Corporation and Phillips Petroleum Company	60,032.00
Comprising 7,680 acres in townships 44 and 45, range 5, west of the 5th meridian and in township 45, range 6, west of the 5th meridian - Pekisko formation - eleven quarter sections.	Amerada Petroleum Corporation	426,852.80
Comprising 6,240 acres in township 58, ranges 8 and 9, west of the 5th meridian - Mississippian - nine quarter sections.	Anderson-Prichard Oil Corporation	14,400.00
Comprising 6,400 acres in township 59, range 8, west of the 5th meridian and in townships 58 and 59, range 9, west of the 5th meridian - Mississippian - nine quarter sections.	Champlin Oil & Refining Co.	30,257.00
Comprising 7,040 acres in townships 82 and 83, ranges 13 and 14, west of the 5th meridian - Precambrian granite - ten quarter sections.	Richfield Oil Corporation and Sunray Oil Company	17,622.22
Comprising 11,840 acres in township 43, range 17, west of the 5th meridian, townships 42 and 43, range 18, west of the 5th meridian and in townships 43 and 44, range 19, west of the 5th meridian - Mississippian - sixteen quarter sections.	Consolidated Mic Mac Oils Ltd. and Mayfair Oil & Gas Ltd.	25,606.00
Comprising 6,400 acres in townships 69 and 70, range 19, west of the 5th meridian - Mississippian - nine quarter sections.	Texaco Canada Limited and Amerada Petroleum Corporation	15,840.00
Comprising 10,240 acres in townships 63 and 64, ranges 24 and 25, west of the 5th meridian - Beaverhill Lake formation - sixteen quarter sections.	The California Standard Company	26,000.00

CROWN RESERVE DRILLING RESERVATIONS PURCHASED

(Continued)

Description:	Offer Accepted From:	Cash Purchase Price
Comprising 6,400 acres in townships 78 and 79, ranges 7 and 8, west of the 6th meridian - Cadomin formation - nine quarter sections.	Consolidated Mic Mac Oils Ltd. and Mayfair Oil & Gas Ltd.	\$ 14,500.00
Comprising 4,480 acres in townships 28 and 29, range 5, west of the 4th meridian and in township 28, range 6, west of the 4th meridian - Banff formation - six quarter sections.	Samedan Oil of Canada Inc.	11,212.80
Comprising 5,120 acres in townships 25 and 26, range 11, west of the 4th meridian - Mississippian - seven quarter sections.	Arrowhead Exploration Company Ltd.	12,300.00
Comprising 5,120 acres in township 26, range 13, west of the 4th meridian - Mississippian - seven quarter sections.	Canadian Oil Companies Limited, Amurex Oil Company and Ashland Oil & Refining Company	31,232.00
Comprising 3,840 acres in township 4, ranges 15 and 16, west of the 4th meridian - Mississippian - six quarter sections.	Phillips Petroleum Company	9,600.00
Comprising 5,600 acres in township 17, range 19, west of the 4th meridian and in townships 16 and 17, range 20, west of the 4th meridian - Elkton member of the Turner Valley formation - eight quarter sections.	Woods Petroleum of Canada Ltd., and Apache Corporation	15,650.00
Comprising 6,400 acres in townships 15 and 16, ranges 21 and 22, west of the 4th meridian - Shunda formation of the Rundle group - nine quarter sections.	Canadian Pacific Oil and Gas Limited	17,956.80
Comprising 6,440 acres in township 31, range 21, west of the 4th meridian and in townships 30 and 31, range 22, west of the 4th meridian - Mississippian - nine quarter sections.	Arrowhead Exploration Company Ltd.	34,132.00
Comprising 6,720 acres in township 50, ranges 22 and 23, west of the 4th meridian and in township 51 range 23, west of the 4th meridian - Cooking Lake formation of the Wabamun group - ten quarter sections.	Canada-Cities Service Petroleum Corporation	42,016.00
Comprising 6,880 acres in township 16, ranges 24 and 25, west of the 4th meridian and in township 17, range 25, west of the 4th meridian - Elkton member of the Turner Valley formation - ten quarter sections.	Cancrude Oil & Gas Co. Ltd.	25,123.45
Comprising 9,947 acres in township 33, range 28, west of the 4th meridian, townships 33 and 34, range 29, west of the 4th meridian and in townships 32, 33 and 34, range 1, west of the 5th meridian - Crossfield formation of the Wabamun group - fourteen quarter sections.	Pan American Petroleum Corporation	74,701.97
Comprising 9,440 acres in townships 36 and 37, range 6, west of the 5th meridian - Shunda formation of the Rundle group - fourteen quarter sections.	Supertest Petroleum Corporation Limited, Altana Exploration Company and Hudson's Bay Oil and Gas Company Limited	46,200.00
Comprising 6,258 acres in township 53, range 12, west of the 5th meridian - Cardium formation - nine quarter sections.	Canadian Oil Companies Limited	32,185.50
Comprising 6,400 acres in townships 53 and 54, range 12, west of the 5th meridian - Cardium formation - nine quarter sections.	Canadian Oil Companies Limited	14,450.00

CROWN RESERVE DRILLING RESERVATIONS PURCHASED

(Continued)

Description:	Offer Accepted From:	Cash Purchase Price
Comprising 11,040 acres in township 65, ranges 6 and 7, west of the 6 th meridian - Mississippian - sixteen quarter sections.	Bailey Selburn Oil & Gas Ltd., Camarillo Oils Limited, French Petroleum Company of Canada Ltd., Regent Refining (Canada) Limited, Sarcee Petroleums Limited and Selbay Exploration Ltd.	\$ 25,625.00
Comprising 11,200 acres in township 64, ranges 7 and 8, west of the 6 th meridian - Mississippian - sixteen quarter sections.	Bailey Selburn Oil & Gas Ltd., Camarillo Oils Limited, French Petroleum Company of Canada Ltd., Regent Refining (Canada) Limited, Sarcee Petroleums Limited and Selbay Exploration	25,625.00
Comprising 6,080 acres in township 79, ranges 12 and 13, west of the 6 th meridian - Triassic system - nine quarter sections.	Medallion Petroleums Limited and Canadian Homestead Oils Limited	14,450.00
Comprising 5,600 acres in township 51, range 1, west of the 4 th meridian - Rex sand of the Mannville formation - eight quarter sections.	Husky Oil & Refining Ltd.	6,668.80
Comprising 7,706 acres in townships 48 and 49, range 22, west of the 4 th meridian - Elk Point group - eleven quarter sections.	Canada-Cities Service Petroleum Corporation	101,323.20
Comprising 7,715 acres in townships 48 and 49, range 23, west of the 4 th meridian - Elk Point group - eleven quarter sections.	Canada-Cities Service Petroleum Corporation	58,660.80
Comprising 7,680 acres in townships 33, 34 and 35, range 2, west of the 5 th meridian and in townships 34 and 35, range 3, west of the 5 th meridian - Mississippian - twelve quarter sections.	Canada-Cities Service Petroleum Corporation	78,176.00
Comprising 7,680 acres in townships 33 and 34, ranges 3 and 4, west of the 5 th meridian - Viking - eleven quarter sections.	DeKalb Petroleum Corporation	167,000.00
Comprising 6,720 acres in townships 86 and 87, ranges 22 and 23, west of the 5 th meridian - Precambrian granite - eleven quarter sections.	Shell Oil Company of Canada, Limited	53,085.95
Comprising 8,000 acres in townships 82 and 83, ranges 2 and 3, west of the 6 th meridian - Precambrian granite - twelve quarter sections.	Amerada Petroleum Corporation	21,158.40
Comprising 8,800 acres in township 87, ranges 4 and 5, west of the 6 th meridian - Precambrian granite - twelve quarter sections.	Shell Oil Company of Canada, Limited	459,079.95
Comprising 8,320 acres in township 87, ranges 5 and 6, west of the 6 th meridian - Precambrian granite - twelve quarter sections.	Shell Oil Company of Canada, Limited	559,097.95
Comprising 4,320 acres in townships 99 and 100, range 6, west of the 6 th meridian - Mississippian - six quarter sections.	The Pure Oil Company	9,600.00
Comprising 6,880 acres in township 30, range 19, west of the 4 th meridian and in townships 29 and 30, range 20, west of the 4 th meridian - Leduc formation of the Woodbend group - ten quarter sections.	The British American Oil Company Limited	51,051.51
Comprising 7,520 acres in township 36, range 21, west of the 4 th meridian, townships 35 and 36, range 22, west of the 4 th meridian and in township 35, range 23, west of the 4 th meridian - Cooking Lake formation of the Woodbend group - eleven quarter sections.	The British American Oil Company Limited and Great Plains Development Company of Canada, Ltd.	617,761.00

CROWN RESERVE DRILLING RESERVATIONS PURCHASED

(Continued)

Description:	Offer Accepted From:	Cash Purchase Price
Comprising 6,004 acres in township 46, ranges 21 and 22, west of the 4th meridian - Wabamun group - nine quarter sections.	Mid-Western Industrial Gas Ltd. and Imperial Oil Limited	\$ 20,160.00
Comprising 8,640 acres in township 35, range 4, west of the 5th meridian, townships 35 and 36, range 5, west of the 5th meridian and in township 35, range 6, west of the 5th meridian - Mississippian - fourteen quarter sections.	Altana Exploration Company	712,000.00
Comprising 8,480 acres in township 37, range 4, west of the 5th meridian, townships 36 and 37, range 5, west of the 5th meridian and in township 37, range 6, west of the 5th meridian - Mississippian - fourteen quarter sections.	Imperial Oil Limited and Hudson's Bay Oil and Gas Company Limited	286,182.40
Comprising 7,840 acres in townships 42 and 43, range 4, west of the 5th meridian and in township 43, range 5, west of the 5th meridian - Pekisko formation - eleven quarter sections.	Imperial Oil Limited, Canadian Superior Oil of California, Ltd. and Luscar Coals Limited	551,226.00
Comprising 7,840 acres in township 44, ranges 5 and 6, west of the 5th meridian - Pekisko formation - twelve quarter sections.	Imperial Oil Limited, Canadian Superior Oil of California, Ltd. and Luscar Coals Limited	150,766.00
Comprising 7,200 acres in township 50, ranges 11 and 12, west of the 5th meridian and in township 51, range 12, west of the 5th meridian - Cardium formation - ten quarter sections.	Skelly Oil Company	122,400.00
Comprising 6,846 acres in townships 22 and 23, ranges 14 and 15, west of the 4th meridian - Mississippian - seven quarter sections.	Canadian Husky Oil Ltd.	15,176.55
Comprising 4,480 acres in township 13, ranges 18 and 19, west of the 4th meridian - Mississippian - seven quarter sections.	Bailey Selburn Oil & Gas Ltd., Home Oil Company Limited, Alminex Limited and Kern County Land Company	19,087.97
Comprising 5,760 acres in township 16, range 19, west of the 4th meridian and in townships 15 and 16, range 20, west of the 4th meridian - Elkton member of the Turner Valley formation - nine quarter sections.	L-M Oil Company Ltd. and Monsanto Chemical Company	27,806.40
Comprising 7,200 acres in townships 32, 33 and 34, range 23, west of the 4th meridian - Leduc formation of the Woodbend group - eleven quarter sections.	Sun Oil Company	27,610.00
Comprising 7,160 acres in township 20, range 27, west of the 4th meridian, townships 19 and 20, range 28, west of the 4th meridian and in township 19, range 29, west of the 4th meridian - third sandstone unit of the Cardium formation - ten quarter sections.	Texaco Exploration Company	72,227.27
Comprising 7,680 acres in townships 39 and 40, ranges 3 and 4, west of the 5th meridian - Mississippian - eleven quarter sections.	Anderson-Prichard Oil Corporation	110,148.00
Comprising 5,120 acres in township 61, range 6, west of the 5th meridian and in townships 60 and 61, range 7, west of the 5th meridian - Viking - seven quarter sections.	Western Leaseholds Ltd.	11,220.00
Comprising 8,320 acres in townships 67 and 68, range 6, west of the 5th meridian - Cambrian shale - twelve quarter sections.	Imperial Oil Limited	19,219.20

CROWN RESERVE DRILLING RESERVATIONS PURCHASED

(Continued)

Description:	Offer Accepted From:	Cash Purchase Price
Comprising 7,680 acres in townships 75 and 76, range 12, west of the 5th meridian - Precambrian granite - eleven quarter sections.	Hudson's Bay Oil and Gas Company Limited and Union Oil Company of California	\$ 17,987.20
Comprising 10,880 acres in townships 57 and 58, range 16, west of the 5th meridian - Leduc formation of the Woodbend group - sixteen quarter sections.	Canadian Delhi Oil Ltd.	57,031.77
Comprising 11,520 acres in townships 65, 66 and 67, ranges 26 and 27, west of the 5th meridian - Leduc formation of the woodbend group - sixteen quarter sections.	The Pure Oil Company	39,680.00
Comprising 4,000 acres in township 97, ranges 7 and 8, west of the 6th meridian - Mississippian - six quarter sections.	The Pure Oil Company	9,600.00
Comprising 4,480 acres in townships 97 and 98, range 8, west of the 6th meridian - Mississippian - six quarter sections.	The Pure Oil Company	9,600.00
Comprising 10,840 acres in townships 16, 17 and 18, range 3, west of the 5th meridian - occurring at a depth of ten thousand feet - sixteen quarter sections.	The California Standard Company	161,467.59
Comprising 6,720 acres in township 46, range 5, west of the 5th meridian and in townships 46 and 47, range 6, west of the 5th meridian - Pekisko formation - ten quarter sections.	Home Oil Company Limited, Kern County Land Company and Alminex Limited	24,050.00
Comprising 7,040 acres in township 49, range 5, west of the 5th meridian and in township 50, ranges 5 and 6, west of the 5th meridian - Banff formation - ten quarter sections.	Pan American Petroleum Corporation and United Producing Company Inc.	253,500.00
Comprising 6,560 acres in townships 44 and 45, range 6, west of the 5th meridian - Cardium formation - ten quarter sections.	Texaco Exploration Company	66,555.00
Comprising 8,800 acres in townships 35 and 36, ranges 7 and 8, west of the 5th meridian - Elkton member of the Turner Valley formation - sixteen quarter sections.	Sinclair Canada Oil Company	154,157.11
Comprising 8,837 acres in township 41, ranges 7 and 8, west of the 5th meridian and in township 42, range 8, west of the 5th Meridian - Pekisko formation - fourteen quarter sections.	Amerada Petroleum Corporation	41,161.11
Comprising 6,400 acres in townships 58 and 59, range 8, west of the 5th meridian - Pekisko formation - nine quarter sections.	Shell Oil Company of Canada, Limited	65,775.95
Comprising 8,379 acres in township 73, ranges 12 and 13, west of the 5th meridian - Precambrian granite - eleven quarter sections.	Texaco Exploration Company	22,123.00
Comprising 7,040 acres in township 83, ranges 14 and 15, west of the 5th meridian - Precambrian granite - eleven quarter sections.	The California Standard Company	17,652.80
Comprising 7,040 acres in townships 83 and 84, range 14, west of the 5th meridian and in township 83, range 15, west of the 5th meridian - Precambrian granite - eleven quarter sections.	The California Standard Company	17,652.80
Comprising 8,960 acres in townships 60 and 61, range 16, west of the 5th meridian - Woodbend group - fourteen quarter sections.	Canadian Fina Oil Limited, Pan American Petroleum Corporation and Hudson's Bay Oil and Gas Company Limited	303,500.00

CROWN RESERVE DRILLING RESERVATIONS PURCHASED

(Continued)

Description:	Offer Accepted From:	Cash Purchase Price
Comprising 7,680 acres in townships 89 and 90, range 16, west of the 5th meridian - Precambrian granite - eleven quarter sections.	Union Texas Natural Gas Corporation and Champlin Oil and Refining Co.	\$ 23,116.80
Comprising 7,040 acres in township 90, ranges 20 and 21, west of the 5th meridian - Precambrian granite - ten quarter sections.	Home Oil Company Limited, Union Oil Company of California, Kern County Land Company and Alminex Limited	24,050.00
Comprising 11,620 acres in townships 71 and 72, ranges 7 and 8, west of the 6th meridian - Leduc formation of the Woodbend group - sixteen quarter sections.	Sun Oil Company and The Pure Oil Company	28,160.00
Comprising 8,160 acres in townships 30 and 31, ranges 19 and 20, west of the 4th meridian - Elk Point group - twelve quarter sections.	The British American Oil Company Limited	31,017.87
Comprising 6,400 acres in township 32, ranges 20 and 21, west of the 4th meridian - Pekisko formation - nine quarter sections.	Amerada Petroleum Corporation and Honolulu Oil Corporation	167,711.00
Comprising 7,040 acres in townships 36, 37 and 38, range 21, west of the 4th meridian and in township 37, range 22, west of the 4th meridian - Leduc formation of the Woodbend group - ten quarter sections.	The British American Oil Company Limited	25,025.26
Comprising 6,317 acres in townships 46, 47 and 48, range 21, west of the 4th meridian - Cooking Lake formation of the Woodbend group - nine quarter sections.	Canada-Cities Service Petroleum Corporation	54,331.20
Comprising 4,480 acres in township 77, ranges 25 and 26, west of the 4th meridian - Wabamun group - six quarter sections.	Pan American Petroleum Corporation	14,560.00
Comprising 10,880 acres in townships 65 and 66, range 14, west of the 5th meridian and in township 65, range 15, west of the 5th meridian - Gilwood sand of the Elk Point group - sixteen quarter sections.	Wintershall Oil of Canada Ltd.	30,325.00
Comprising 10,240 acres in townships 63, 64 and 65, range 17, west of the 5th meridian - Precambrian granite - sixteen quarter sections.	Skelly Oil Company	79,564.80
Comprising 10,880 acres in townships 57, 58 and 59, range 20, west of the 5th meridian and in townships 58 and 59, range 21, west of the 5th meridian - Leduc formation of the Woodbend group - sixteen quarter sections.	The California Standard Company	211,222.34
Comprising 11,040 acres in township 60, ranges 21 and 22, west of the 5th meridian - Woodbend group - sixteen quarter sections.	Pan American Petroleum Corporation and Hudson's Bay Oil and Gas Company Limited	372,379.20
Comprising 8,960 acres in townships 74 and 75, range 1, west of the 6th meridian - Precambrian granite - fourteen quarter sections.	Canadian Oil Companies Limited, Supertest Petroleum Corporation Limited and Alminex Limited	40,510.00
Comprising 11,200 acres in townships 71 and 72, ranges 3 and 4, west of the 6th meridian - Precambrian granite - sixteen quarter sections.	Plymouth Oil Company and Pan American Petroleum Corporation	28,441.60
Comprising 10,080 acres in townships 18 and 19, range 3, west of the 5th meridian and in townships 19 and 20, range 4, west of the 5th meridian - occurring at a depth of ten thousand feet - sixteen quarter sections.	The California Standard Company	161,467.59
		\$ 9,130,369.38

CROWN RESERVE NATURAL GAS LICENCES PURCHASED

Description:	Offer Accepted From:	Cash Purchase Price
Comprising 12,000 acres in townships 18 and 19, ranges 1 and 2, west of the 4th meridian.	Britalta Petroleum Limited, Consolidated Mic Mac Oils Ltd. and Mayfair Oil & Gas Ltd.	\$ 51,804.00
Comprising 23,200 acres in townships 32 and 33, range 1, west of the 4th meridian, townships 31, 32 and 33, range 2, west of the 4th meridian and in townships 31 and 32, range 3, west of the 4th meridian.	Canadian Homestead Oils Limited	6,466.00
Comprising 16,960 acres in townships 26 and 27, ranges 3 and 4, west of the 4th meridian.	Texas Pacific Coal and Oil Company	35,785.60
Comprising 12,000 acres in townships 41 and 42, range 18, west of the 4th meridian and in townships 40, 41, 42 and 43, range 19, west of the 4th meridian.	Zapata Canadian Petroleum Corporation and Liedtke Petroleum Ltd.	25,320.00
Comprising 13,440 acres in townships 34 and 35, ranges 10 and 11, west of the 4th meridian.	Edwin Foster Blair	7,000.00
Comprising 10,877 acres in townships 10 and 11, range 20, west of the 4th meridian.	Canadian Pacific Oil and Gas Limited	4,024.49
Comprising 56,913 acres in townships 67, 68 and 69, range 23, west of the 5th meridian and in townships 68, 69 and 70, ranges 24 and 25, west of the 5th meridian.	Tennessee Gas Transmission Company	59,779.00
Comprising 32,320 acres in townships 27 and 28, ranges 7 and 8, west of the 5th meridian, township 29, ranges 8 and 9, west of the 5th meridian and in township 30, ranges 9 and 10, west of the 5th meridian.	Shell Oil Company of Canada, Limited	3,087,095.95
Comprising 16,960 acres in townships 16 and 17, range 1, west of the 4th meridian.	North Canadian Oils Limited	6,977.00
Comprising 9,440 acres in townships 22 and 23, range 2, west of the 4th meridian.	American Climax Petroleum Corporation	6,111.11
Comprising 22,400 acres in township 6, range 7, west of the 4th meridian and in townships 5 and 6, range 8, west of the 4th meridian.	Canadian Homestead Oils Limited	26,900.00
Comprising 35,360 acres in township 77, range 8, west of the 6th meridian and in townships 76 and 77, ranges 9, 10 and 11, west of the 6th meridian.	Canadian Export Gas & Oil Ltd., Alminex Limited, LOEC Minerals Inc., and Canadian High Crest Oils Limited	217,982.00
Comprising 12,960 acres in township 27, range 12, west of the 4th meridian and in townships 27 and 28, range 13, west of the 4th meridian.	Devon-Palmer Oils Ltd. (No Personal Liability), Francana Oil and Gas Ltd. and West Canadian Oil & Gas Ltd.	14,385.60
Comprising 31,040 acres in townships 20, 21 and 22, ranges 6 and 7, west of the 4th meridian and in township 21, range 8, west of the 4th meridian.	Crusade Petroleum Corporation Limited	1,233.00
Comprising 17,600 acres in township 4, range 7, west of the 4th meridian and in township 5, ranges 7 and 8, west of the 4th meridian.	Whitehall Canadian Oils Ltd. and Tricentrol Oils Limited	43,300.00
Comprising 31,040 acres in townships 49, 50 and 51, range 11, west of the 4th meridian, townships 49, 50, 51 and 52, range 12, west of the 4th meridian and in townships 51 and 52, range 13, west of the 4th meridian.	Hamilton Brothers Canadian Gas Company Ltd. and Pan American Petroleum Corporation	92,836.80

CROWN RESERVE NATURAL GAS LICENCES PURCHASED

(Continued)

Description:	Offer Accepted From:	Cash Purchase Price
Comprising 15,840 acres in townships 67 and 68, range 13, west of the 4th meridian and in townships 68 and 69, range 14, west of the 4th meridian.	Sage Oil Company Limited and Northern Alberta Pipe Lines Limited	\$ 9,979.20
Comprising 9,280 acres in townships 48 and 49, range 17, west of the 4th meridian and in townships 49 and 50, range 18, west of the 4th meridian.	Northwestern Utilities Limited	73,632.00
		<u>\$ 3,770,111.75</u>

CROWN RESERVE FRACTIONAL AREA LEASES PURCHASED

Description:	Offer Accepted From:	Cash Purchase Price
Comprising 5.40 acres in section 33, township 39, range 3, west of the 5th meridian.	The British American Oil Company Limited	\$ 1,073.90
Comprising 79.5 acres in section 28, township 51, range 26, west of the 4th meridian.	Imperial Oil Limited	5,356.00
Comprising 8.22 acres in section 3, Township 42, range 2, west of the 5th meridian.	The British American Oil Company Limited	246.00
Comprising 10 acres in section 21, township 30, range 2, west of the 5th meridian.	Home Oil Company Limited	1,820.00
Comprising 96 acres in section 35, township 43, range 23, west of the 4th meridian.	Charles McGaha	1,200.00
Comprising 320 acres in section 12 in unsurveyed township 60, range 16, west of the 5th meridian.	Hudson's Bay Oil and Gas Company Limited, Pan American Petroleum Corporation and Canadian Fina Oil Limited	3,200.00
Comprising 160 acres in section 13 in unsurveyed township 60, range 16, west of the 5th meridian.	Hudson's Bay Oil and Gas Company Limited, Pan American Petroleum Corporation and Canadian Fina Oil Limited	1,600.00
Comprising 640 acres in section 36 in unsurveyed township 60, range 16, west of the 5th meridian and in section 1 in unsurveyed township 61 range 16, west of the 5th meridian.	Hudson's Bay Oil and Gas Company Limited, Pan American Petroleum Corporation and Canadian Fina Oil Limited	131,600.00
Comprising 320 acres in section 4, township 32, range 4, west of the 5th meridian.	Shell Oil Company of Canada, Limited	97,500.00
Comprising 160 acres in section 32, township 32, range 4, west of the 5th meridian.	Canadian Superior Oil of California, Ltd.	19,500.00
Comprising 296 acres in section 31, township 50, range 22, west of the 4th meridian.	Canada-Cities Service Petroleum Corporation	7,772.96
Comprising 158.3 acres in section 19, township 50, range 22, west of the 4th meridian.	Canada-Cities Service Petroleum Corporation	4,156.96
Comprising 14 acres in section 19, township 50, range 22, west of the 4th meridian.	Canada-Cities Service Petroleum Corporation	367.64
Comprising 115.7 acres in section 17, township 50, range 22, west of the 4th meridian.	Canada-Cities Service Petroleum Corporation	3,038.28

CROWN RESERVE FRACTIONAL AREA LEASES PURCHASED

(Continued)

Description:	Offer Accepted From:	Cash Purchase Price
Comprising 190 acres in section 25, township 50, range 23, township 50, range 23, west of the 4th meridian.	Canada-Cities Service Petroleum Corporation	\$ 4,989.40
Comprising 110.62 acres in section 35, township 50, range 23, west of the 4th meridian.	Canada-Cities Service Petroleum Corporation	2,904.88
Comprising 58 acres in section 17, township 48, range 22, west of the 4th meridian.	Canada-Cities Service Petroleum Corporation	3,339.06
Comprising 55 acres in section 17, township 48, range 22, west of the 4th meridian.	Canada-Cities Service Petroleum Corporation	3,166.35
Comprising 65 acres in section 17, township 28, range 26, west of the 4th meridian.	Texaco Exploration Company	975.00
Comprising 24 acres in section 19, township 52, range 26, west of the 4th meridian.	Pan American Petroleum Corporation	1,624.08
Comprising 130 acres in section 33, township 43, range 22, west of the 4th meridian.	Charles McGaha	5,525.00
Comprising 13 acres in section 17, township 39, range 2, west of the 5th meridian.	The British American Oil Company Limited	1,164.58
Comprising 129.80 acres in section 15, township 40, range 21, west of the 4th meridian.	The California Standard Company	2,660.40
Comprising 118.70 acres in section 23, township 40, range 21, west of the 4th meridian.	The California Standard Company	5,893.81
Comprising 122.74 acres in section 9, township 41, range 21, west of the 4th meridian.	The California Standard Company	10,189.96
		\$ 320,864.26

CROWN RESERVE NATURAL GAS LEASES PURCHASED

(Pursuant to The Mines and Minerals Act Section 280)

Description:	Offer Accepted From:	Cash Purchase Price
The east halves of sections 14 and 23, the north half of section 28 and section 33, township 28, range 5, west of the 4th meridian.	Hudson's Bay Oil and Gas Company Limited and The Ohio Oil Company	\$ 13,100.00
Portions of sections 4, 5, 8 and 9, township 3, range 30, west of the 4th meridian.	Shell Oil Company of Canada, Limited	56,465.98
The north west quarter of section 34, township 35, range 26, west of the 4th meridian.	Honolulu Oil Corporation	9,462.06
Comprising 257.4 acres in section 3, township 55, range 22, west of the 4th meridian.	Union Oil Company of California	11,381.91
The east half of section 12, township 41, range 25, west of the 4th meridian.	Imperial Oil Limited	1,700.00
The north halves of sections 25 and 26, section 33, the south halves of sections 34 and 35 and section 36, township 57, range 19, west of the 5th meridian and section 1, township 58, range 19, west of the 5th meridian.	Canadian Fina Oil Limited, Pan American Petroleum Corporation and Hudson's Bay Oil and Gas Company Limited	131,500.00
		\$ 223,609.95

CROWN RESERVE NATURAL GAS LEASES PURCHASED

(Pursuant to The Mines and Minerals Act Section 282 Subsection (2) Clause (b))

Description:	Offer Accepted From:	Cash Purchase Price
The north half of section 13, township 24, range 20, west of the 4th meridian.	Canadian Pacific Oil and Gas Limited	\$ 11,735.94
The north west quarter of section 24, township 27, range 21, west of the 4th meridian.	Canadian Pacific Oil and Gas Limited	8,225.00
Comprising 106.5 acres in section 15, township 53, range 26, west of the 4th meridian.	Canadian Industrial Gas Limited, The California Standard Company, and Imperial Oil Limited	5,990.63
Comprising 5 acres in section 31, township 54, range 25, west of the 4th meridian.	Amalta Oils Limited	289.06
The east half of section 13, township 24, range 11, west of the 4th meridian.	Hudson's Bay Oil and Gas Company Limited and Canadian Delhi Oil Ltd.	14,600.00
Comprising 13 acres in section 25, township 26, range 21, west of the 4th meridian.	Canadian Pacific Oil and Gas Limited	276.25
Comprising 23 acres in the north east quarter of section 27, township 19, range 16, west of the 4th meridian.	Sun Oil Company	1,139.22
		<hr/> \$ 42,256.10

CROWN RESERVE PETROLEUM LEASES PURCHASED

(Pursuant to The Mines and Minerals Act Section 280)

Description:	Offer Accepted From:	Cash Purchase Price
Comprising 6,400 acres in townships 59, 60 and 61, range 15, west of the 5th meridian.	Hudson's Bay Oil and Gas Company Limited, Pan American Petroleum Corporation and Canadian Fina Oil Limited	\$ 16,000.00

Reservations—During the fiscal year 278 reservations were issued covering an area of 11,449,115 acres and at the close of the year 651 reservations were active containing an area of 31,444,990 acres.

The revenue from reservation fees amounted to \$71,750.00, for extending reservations amounted to \$3,344,653.09 and the revenue from bonuses accepted by the Director of Mineral Rights at sales of petroleum and natural gas reservations by tender amounted to \$1,474,086.29.

Credit of not in excess of fifty per cent of the approved expenditures incurred in geophysical examination including drilling on petroleum and natural gas reservations may apply to the rental for one year of any lease or leases acquired out of the reservations and during the fiscal year under review rentals of \$3,971,097.03 were satisfied from such expenditures.

Crown Reserve Drilling Reservations—During the fiscal year 97 drilling reservations were issued covering an area of 740,601 acres and at the close of the year 138 were active containing an area of 1,120,761 acres.

The revenue from drilling reservation fees amounted to \$24,250.00, from rentals \$589,016.56 and the revenue from

accepted offers at sales of Crown reserve drilling reservations amounted to \$9,130,369.88.

Credit may be granted for expenditures incurred in drilling a well on a drilling reservation applied in satisfaction of the first year's rental. During the fiscal year rental on leases acquired out of the reservations of \$138,959.70 were satisfied by credit.

Natural Gas Licences—During the fiscal year 28 natural gas licences covering an area of 357,923 acres were issued and at the close of the year 27 licences were active containing an area of 727,454 acres. The revenue from fees was \$7,250.00 and from rentals was \$62,851.67. Credit may be granted for expenditures incurred in drilling a well on a natural gas licence and applied in satisfaction of the first year's rental. During the fiscal year rentals on leases acquired out of the licences of \$25,031.90 were satisfied by credit.

Crown Reserve Natural Gas Licences—During the fiscal year nineteen Crown reserve natural gas licenses covering an area of 401,710 acres were issued. At the close of the year 23 licences were active, containing an area of 582,016 acres. The revenue from fees was \$5,000.00, from rentals \$50,489.45 and the revenue from accepted offers at sales of Crown reserve natural gas licences amounted to \$3,770,141.75. Credit may be granted for expenditures incurred in drilling a well on a Crown reserve natural gas licence and applied in satisfaction of the first year's rental. During the fiscal year rentals on leases acquired out of the licences of \$8,879.20 were satisfied by credit.

Natural Gas Leases—During the fiscal year 97 natural gas leases were issued covering 302,522 acres and at the close of the fiscal year a total of 564 leases were in existence comprising an area of 2,311,011 acres. Eighty-four of the leases were granted out of natural gas licences or Crown reserve natural gas licenses and permit the recovery of natural gas from one or more zones specified in the lease. Seven leases were issued comprising the balance of spacing units to permit natural gas wells that were capable of commercial production to be operated at full production allowables and six leases were issued within unitized areas.

The annual rental of a natural gas lease is thirty-three and one-third cents an acre while an adequate market or a market in which the lessee may participate is not available, the annual rental is reduced to ten cents an acre. The revenue received from fees was \$990.00 and from lease rentals \$542,305.62.

COAL

In the fiscal year, seventeen leases were issued containing 3,870 acres, being made up of new and renewal and second renewal leases. There are now 433 active leases comprising 142,268 acres. There were two road allowance coal mining leases issued and there are now 136 active. The revenue received from fees was \$140.00 and from lease rentals \$48,700.26.

Crown royalties collected during the fiscal year were \$72,821.12 and the following tonnage of coal, subject to royalty was mined.

	Tons
Coal Leases	718,595
Coal Lands and Mineral Sales	127,315
TOTAL	845,910

QUARRYING

During the fiscal year twenty quarrying leases comprising a total of 1,622 acres were issued, one for marl, four for volcanic ash, four for clay, six for limestone, two for clay, marl and volcanic ash, one for shale, one for limestone and shale and one for gypsum.

Extraction of 437,722 tons of limestone and shale, 62,884 cubic yards of clay, 10,238 tons of bentonite, 6,648 tons of sandstone and 370 tons of dolomitic siltstone from Crown leases was reported and at the close of the fiscal year 88 quarrying leases containing an area of 15,513 acres were active.

BITUMINOUS SANDS

During the fiscal year nineteen bituminous sands leases, comprising a total of 781,496 acres were issued, and at the close of the year 50 leases were active containing an area of 1,499,348 acres. No bituminous sands prospecting permits were issued during the year. There were thirteen permits active at the close of the year.

QUARTZ

During the fiscal year fifteen claims were recorded and 65 continued for a further year. The claim in the Drumheller district for the recovery of bentonite was one of those continued.

PLACER

During the fiscal year eleven claims were renewed for another year. There were 111 ounces of gold and ten ounces of silver recovered at two gravel plants.

SODIUM CHLORIDE (Common Salt)

During the fiscal year the plant near Lindberg operated and reported extraction of 41,978 tons, an increase of 4,455 tons over the previous year.

SULPHUR

The total production of sulphur in Alberta for 1960 was 389,926 tons, an increase of 151,282 tons over the previous year. There were nine producing plants by the end of the year and three new plants commenced production during the year.

IRON

During the fiscal year two iron prospecting permits were issued comprising 116,927 acres.

MINERAL SALES

During the fiscal year eighteen notifications were issued pursuant to section 26 of The Mines and Minerals Act. These are known as mineral sales and are acquired at a nominal consideration of \$1.00. Section 26 provides a means whereby minerals in roadways may be returned to the adjacent owner.

WELL LICENCES

There were 1,703 well licences issued during the fiscal year for the drilling of oil and gas wells, structure test holes, injection wells and water wells.

DRILLING STATISTICS

The drilling and production of petroleum and natural gas wells in the Province are administered by the Oil and Gas Conservation Board, 603-6th Avenue South West, Calgary, Alberta, and particulars as to the drilling activity, production and statistical data are included in weekly, monthly and annual reports issued by the Board.

GEOPHYSICAL AND GEOLOGICAL EXPLORATION

A person desiring to undertake geophysical or sub-surface geological exploration must obtain a licence from the Department. The applicant before the issue of the licence must furnish a cash deposit to the Provincial Treasurer in the sum of \$1,000.00 to insure that operations are conducted in accordance with The Mines and Minerals Act and the regulations governing geophysical exploration. During the fiscal year 126 licenses were issued and they will expire on the 31st of March following, unless renewed.

The regulations governing operations by seismic, gravimetric, magnetic, electrical, geochemical, test drilling or other method which may be used for the purpose of exploring the subsurface require the operator to obtain an annual permit to operate geophysical equipment and a fee of \$25.00 is required for each permit. During the fiscal year sixteen such permits were issued and 57 renewed.

There are four investigators and each is allocated an area of the Province and he inspects crews in his area. When it is represented to the Department that a crew has interfered with the right of a person the matter is investigated and in the event that damage or other interference has resulted an investigator endeavours to assist the person affected and the crew in arriving at a settlement.

UNIT OPERATION OF MINERALS

During the fiscal year nineteen agreements pursuant to Part IX of The Mines and Minerals Act were entered into for unit operation of petroleum and natural gas properties. These agreements were:

Pembina Cardium Unit No. 13 in township 49, ranges 8 and 9, west of the 5th meridian.

Bindloss Unit No. 1 in townships 21, 22 and 23, ranges 3, 4 and 5, west of the 4th meridian.

Leduc Woodbend D-2 Unit in townships 50 and 51, ranges 26 and 27, west of the 4th meridian.

Leduc Woodbend D-3 Unit in townships 50 and 51, ranges 26 and 27, west of the 4th meridian.

Pembina Cardium Unit No. 20 in township 49, range 8, west of the 5th meridian.

Morleyville Unit Agreement in township 26, range 7, west of the 5th meridian.

Harmattan-Elkton Agreement No. 1 in townships 31 and 32, ranges 3 and 4, west of the 5th meridian.

Wizard Lake Viking Unit No. 1 in township 48, range 27, west of the 4th meridian.

Oyen Viking Sand Gas Unit Agreement in townships 28 and 29, range 5, west of the 4th meridian.

Innisfail Leduc Reef Unit Agreement in townships 34 and 35, range 1, west of the 5th meridian.

Pembina Cardium Unit No. 31 in townships 48 and 49, range 10, west of the 5th meridian.

Humber Lobitos East Pembina Cardium Unit No. 1 in township 48, ranges 6 and 7, west of the 5th meridian.

Three Hills Creek Pekisko Unit No. 1 in townships 34 and 35, ranges 25 and 26, west of the 4th meridian.

Chauvin Main Mannville Unit in township 43, range 1, west of the 4th meridian.

Westerose South (Dick Lake) Leduc Unit Agreement in townships 45 and 46, range 1, west of the 5th meridian.

Homeglen-Rimbey Leduc Unit Agreement No. 1 in townships 42 and 43, ranges 1 and 2, west of the 5th meridian.

Clive North Basal Quartz Gas Unit in township 41, ranges 24 and 25, west of the 4th meridian.

Cessford Gas Unit Agreement No. 1 in townships 23 and 26 inclusive, ranges 11 to 13 inclusive, west of the 4th meridian.

Pembina Cardium Unit No. 7 (Blue Rapids Area) in townships 46 and 47, range 9, west of the 5th meridian.

Turner Valley Units 4, 5 and 6 were established during the fiscal year pursuant to the Turner Valley Unit Operations Act.

One unit involving Crown lands was established pursuant to section 73 of The Oil and Gas Conservation Act. This section deals with the compulsory pooling of tracts within a spacing unit. This unit pertains to gas in all formations down to and including the Leduc formation in the Willingdon field.

In order to permit operators of petroleum and natural gas properties to comply with schemes directed or approved by the Oil and Gas Conservation Board, 27 agreements were made permitting the performance of the schemes. Seven agreements authorized the return of salt water produced with petroleum to subsurface formations in the Skaro, Leduc Woodbend, Glen Park, Sturgeon Lake South, Big Valley and Gilby fields. Seventeen agreements permitted the injection of water for pressure maintenance purposes. Sixteen were into the Cardium formation of the Pembina Field and one into the Cardium formation of the Rocky Mountain House Field. One agreement permitted the disposal of refinery waste liquids into a subsurface formation. One agreement permitted the injection of gas or water for pressure maintenance purposes into the Cardium formation of the Pembina Field. One agreement permitted the injection of gas and sulphur compounds into the Windfall D3 Pool.

STAFF

At the close of the fiscal year the Division staff numbered 56 employees and continued to give the same conscientious and capable service that they have given in the past.

MINERAL TAX DIVISION

REPORT OF THE SUPERINTENDENT

J. A. SAVAGE

Producing area tax revenue for the fiscal year ending March 31, 1961 amounted to \$957,673.20 being an increase of \$47,873.26 over the previous year's revenue of \$909,799.94. The tax rate for the 1960 assessment remained at eight mills.

Acreage tax received for the year 1960 was \$303,051.45 as against \$337,452.83 for the preceding year, being a decrease of \$34,401.38.

Five new fields were added to the designated producing areas for the year 1960. They are Bentley which is a petroleum field, Campbell, Nevis and Okotoks which are petroleum and natural gas fields and Medicine Hat-Roseglen which is a natural gas field. The areas were assessed as unitized areas and the assessments were made in accordance with the tract factors listed in the Royalty Unitization Agreements.

All producing areas designated by Ministerial Order are listed below showing the number of parcels assessed, minerals assessed and the assessed value of each producing area.

Producing Area	Parcels Assessed	Principal Mineral	Assessed Value
Acheson	29	Petroleum	\$ 3,900,568.67
Bentley	19	Petroleum	1,288,901.19
Bonnie Glen	20	Petroleum	8,305,307.34
Campbell	11	Petroleum and Natural Gas	54,357.96
Fenn-Big Valley	61	Petroleum	8,980,273.28
Joarcam	70	Petroleum	5,878,678.72
Joffre	49	Petroleum	8,531,773.54
Jumping Pound	56	Natural Gas	1,273,478.85
Leduc	273	Petroleum	22,974,067.89
Medicine Hat-Redcliff	109	Natural Gas	377,786.32
Medicine Hat-Roseglen	10	Natural Gas	5,494.93
Nevis	86	Petroleum and Natural Gas	51,681.77
Okotoks	62	Petroleum and Natural Gas	416,925.76
Pincher Creek	25	Petroleum and Natural Gas	1,584,087.20
Provost	120	Natural Gas	297,063.33
Redwater	16	Petroleum	7,152,138.75
Stettler	12	Petroleum	2,178,559.07
Turner Valley	61	Petroleum and Natural Gas	4,186,044.59
Viking-Kinsella	427	Natural Gas	561,159.35
Westerose	5	Petroleum	2,750,952.40
Wizard Lake	6	Petroleum	5,299,214.49

In addition to producing areas designated by Ministerial Order, there are 761 parcels on which a well or a mine is located. These had a total assessed value of \$36,814,071.18 with the principal minerals assessed being petroleum, natural gas, coal and salt.

Under the heading of parcels assessed are the number of items appearing on the assessment roll with each parcel relating to the area contained in a certificate of title. In determining the assessed value of a parcel, each spacing unit on which a well has been brought into production is calculated separately;

consequently, several calculations may be made in arriving at the assessment for petroleum in a parcel containing minerals in a section of land.

The revenue derived from the taxation of minerals from the enactment of the statute in 1941 until March 31st, 1949 collected by the Department of Lands and Mines was \$1,921,180.47 and revenue collected by the Department of Mines and Minerals from April 1st, 1949 is shown in the following tabulation:

Year	Mill Rate	Producing	Per Acre	Acreage Tax	Fees	Total
1949-50	8	\$ 452,838.16	1½c	\$297,883.10	\$ 286.50	\$ 751,007.76
1950-51	8	526,029.61	1½c	307,062.62	511.00	833,603.23
1951-52	8	444,293.91	1½c	323,185.71	2,320.10	769,799.72
1952-53	8	572,671.45	1½c	310,285.08	3,204.00	886,160.53
1953-54	8	717,352.55	1½c	283,853.18	1,055.50	1,002,261.23
1954-55	8	1,031,913.72	1½c	277,842.74	1,467.00	1,311,223.46
1955-56	8	1,031,802.40	1½c	264,496.50	914.50	1,297,213.40
1956-57	8	1,070,380.73	1½c	272,883.90	1,101.50	1,344,366.13
1957-58	8	1,232,795.31	1½c	282,057.60	1,056.50	1,515,909.41
1958-59	8	1,115,478.85	1½c	306,179.40	472.00	1,422,130.25
1959-60	8	909,799.94	1½c	337,452.83	545.50	1,247,798.27
1960-61	8	957,673.20	1½c	303,051.45	339.00	1,261,063.65

There were 678 mineral tax certificates issued during the fiscal year with revenue derived therefrom being \$339.00. A tax certificate shows the amount of current taxes and arrears payable with respect to the mineral or minerals contained in a certificate of title and anyone may obtain a certificate for a fee of fifty cents.

During the fiscal year 248 titles were returned to the former owners pursuant to the provisions of The Mineral Titles Redemption Act. There were 745 titles returned previously, making a total of 993 titles returned since the inception of the Act on April 14, 1958.

In some instances, after the mineral titles were acquired by the Crown, the minerals were granted under lease, licence, reservation, permit or other agreement, for exploration and development. The statute provides that where the minerals have been granted by the Crown, the return of the title to the former owner must be delayed until the minerals are no longer under lease, licence, reservation, permit or other agreement. In these instances, the former owner is entitled to receive the moneys collected by the Crown less a deduction of an amount equal to the tax that would have been charged had title been returned.

Return of the mineral title was deferred in nine cases during the fiscal year and the amount of moneys returned to the former owners was \$23,825.67. This brings the total to \$287,730.20 that has been returned to former owners since the Act came into force.

There were 22 agreements terminated during the year which resulted in titles being returned to former owners. As at March 31, 1961, there were 86 titles, the redemption of which will be delayed because they are subject to lease, licence, reservation, permit or other agreement.

PIPE LINE DIVISION

REPORT OF THE SUPERINTENDENT W. RUTHERFORD

During the year ending March 31st, 1961, there were 606 applications for pipe line permits, 286 Provisional Licences granted after satisfactory testing and 2420 licences granted. The greater number of licences granted compared to the number of permit applications received is due to the large number of licences granted for pipe lines constructed before the coming into force of The Pipe Line Act, 1958.

The majority of construction work carried out during this period was for gas pipe lines, which included transmission pipe lines for The Alberta Gas Trunk Line Company Limited, and gathering pipe line systems which are connected to them. It was also during this period that a certain amount of winter work in clearing and grading of a major transmission pipe line right-of-way was carried out by The Alberta Gas Trunk Line Company Limited preparatory to the construction of the pipe line which will transmit natural gas from Alberta to California.

A number of communities were also connected to existing supplies of natural gas by utility companies. There was a comparatively small programme of construction for oil pipe lines, though a major oil line was "looped" by Federated Pipe Lines Ltd. between the Swan Hills area and Edmonton. The installations now being provided for oil and gas pipe lines are increasing in complexity, which has increased the need for safety in operation.

It also became apparent that sour gas pipe lines were increasing thus necessitating special consideration of safety to guard against the lethal nature of this substance.

During this period the Pipe Line Division staff increased from 8 to 10.

A table follows showing the number of pipe line licences granted during this period and classified by the type of pipe line and giving relevant details of the number of licences granted, mileage of pipe line constructed and cancellation of subsisting licenses for the years 1959 - 1960, 1960 - 1961, together with the grant total up to March 31, 1961.

SUMMARY OF PIPE LINE LICENCES

Types of Pipe Lines	Licensed at March 31, 1960		Licensed During the Year		Cancelled During the Year		Licensed at March 31, 1961	
	Number of Licences	Mileage of Pipe Line	Number of Licences	Mileage of Pipe Line	Number Cancelled	Mileage Cancelled	Number of Licences	Mileage of Pipe Line
Oil Lines	30	535.74	22	451.59	.....	1.06	52	986.27
Gas Lines	71	1427.49	104	1266.42	.....	.67	175	2693.24
Secondary Lines for Oil	639	736.17	595	749.48	22	9.85	1212	1475.80
Secondary Lines for Gas	158	1004.73	102	609.54	.....	16.57	260	1597.70
Secondary Lines for Water	61	71.98	89	203.04	.....	.38	150	274.64
Distribution Lines	179	125.16	125	117.12	.....	.....	304	242.28
Private Lines	119	20.21	148	18.37	.....	.02	267	38.56
TOTAL	1257	3921.48	1185	3415.56	22	28.55	2420	7308.49

TECHNICAL DIVISION

Report of the Superintendent of the Technical Division

J. M. NOVAK

The following report summarizes the operations of the Technical Division for the fiscal year ending March 31, 1961.
DRAUGHTING, LAND DESCRIPTIONS AND GENERAL

The series of maps covering approximately forty-eight townships for each area and on a scale of three-quarters of an inch to the mile were drawn covering the following areas:

LAC LA BICHE—Townships 63 to 70, Ranges 11 to 16, West of the 4th Meridian.

STETTLER—Townships 35 to 42, Ranges 17 to 22, West of the 4th Meridian.

STOLBERG—Townships 37 to 44, Ranges 12 to 17, West of the 5th Meridian.

TABER—Townships 7 to 13, Ranges 14 to 19, West of the 4th Meridian.

WILDCAT HILLS—Townships 22 to 28, Ranges 6 to 11, west of the 5th Meridian.

The map of the Atlee-Buffalo Area was redrawn to cover a larger area and was renamed the Bindloss Area to include Townships 20 to 26, Ranges 1 to 7, West of the 4th Meridian.

The map of the Sibbald Area was redrawn to cover a larger area and was renamed the Sedalia Area to include Townships 27 to 33, Ranges 1 to 7, West of the 4th Meridian.

The map of the Cessford Area was redrawn to cover a larger area and now extends from Townships 22 to 28, Ranges 8 to 15, West of the 4th Meridian.

The map of the Medicine Hat Area was redrawn to cover a larger area and was prepared in two sheets covering the following areas:

MEDICINE HAT AREA (NORTH)—Townships 15 to 19, Ranges 1 to 7, West of the 4th Meridian.

MEDICINE HAT AREA (SOUTH)—Townships 10 to 14, Ranges 1 to 7, West of the 4th Meridian.

Two new maps were drawn to the scale of two inches to the mile on transparent township plans covering the following fields:

Fort Kent and Holmberg.

All new maps drawn and previously drawn are subject to showing the locations of wells as well licences are granted. When the status of a well changes, it is adjusted on the maps. The limits of fields as established by the Oil and Gas Conservation Board are also included on the maps.

A map of the Province showing the location of oil and gas field maps published to March 31, 1961, is included in this report.

The 4,494 maps distributed by the Department is approximately the amount distributed in the previous year. A list of maps is available indicating the price of each map.

The number of subscribers to the Petroleum and Natural Gas Reservation Sketch Service increased from 63 to 64 and 60,000 copies of sketches were prepared and mailed showing a decrease of approximately 3,000 over last year's total.

The Division had 45 subscribers to the Bituminous Sands Prospecting Permit Sketch Service and 850 sketches were prepared and mailed.

During the year, 1,627 applications for licences to drill wells were recommended for issue by the Oil and Gas Conservation Board, which is a decrease of 298 from the 1,925 applications dealt with in the previous year. The Division, upon receipt of each application, searches the ownership of Crown minerals in the spacing unit allotted to the well.

Land descriptions were prepared for all mineral dispositions, as well as descriptions for recommendations to council.

In addition to the 60,000 copies of petroleum and natural gas reservation sketches and 850 bituminous sands prospecting permit sketches which were reproduced on the multigraph duplicator machine, 766,840 copies of other items were reproduced, representing an increase of 107,046 copies over the previous year.

The map of Alberta showing the areas covered by all petroleum and natural gas reservations to March 31, 1960, has been revised to indicate the area of reservations issued during the present year and is included in this report.

The photostat and ozalid print requirements of the Department, as in past years, continued to be supplied by the Technical Division, Department of Lands and Forests.

The "Verifax Copier" reproduced 43,625 copies from original letters and other items as required during the year under review.

The plan attached to each of the 80 applications for quartz claims and 11 placer claims was examined and, when satisfactory, plotted in the departmental township record.

RECORDS

In addition to the work completed as shown in the tables hereunder, the Records Branch of the Division supplied 1,282 township plots to the public indicating available Crown minerals and also plots showing the status of Crown minerals compared to 1,432 plots distributed in the previous year.

*Dispositions, Cancellations and Transfers Recorded in the Township Registers.

	1959-60	1960-61
Coal Mining Leases	64	49
Road Allowance Coal Mining Leases	32	4
Petroleum and Natural Gas Leases	7,237	7,102
Petroleum and Natural Gas Reservations	597	579
Crown Reserve Drilling Reservations	289	219
Natural Gas Licences	58	53
Natural Gas Leases	75	101
Crown Reserve Natural Gas Licences	31	36
Quarrying Leases	32	31
Notifications	13	9
Transfers	2,707	854
Bituminous Sands Prospecting Permits	45	48
Bituminous Sands Leases	14	19
Quartz Claims	72	80
Placer Claims	55	11
Special Mineral Leases	1	2
Iron Prospecting Permits	8	19
Mineral Sales	2	1
Petroleum Leases	2	1
Sodium Sulphate Permits	1	1
TOTALS	11,333	9,218

*Includes Issued, reinstated, divided, renewed and certificates of work.

NUMBER OF AGREEMENTS TRANSFERRED

	1959-60	1960-61
Petroleum and Natural Gas Lease	2,401	2,230
Petroleum and Natural Gas Reservation	176	80
Coal Mining Lease	3	5
Road Allowance Coal Mining Lease	—	9
Quarrying Lease	8	4
Natural Gas Lease	57	30
Natural Gas Licence	3	1
Crown Reserve Natural Gas Licence	5	4
Bituminous Sands Lease	2	4
Bituminous Sands Prospecting Permit	18	2
Crown Reserve Drilling Reservation	33	25
Geophysical Licence	—	1
Geophysical Permit	—	2
Agreement Scheme	1	1
TOTALS	2,707	2,398

NUMBER OF DOCUMENTS FILED

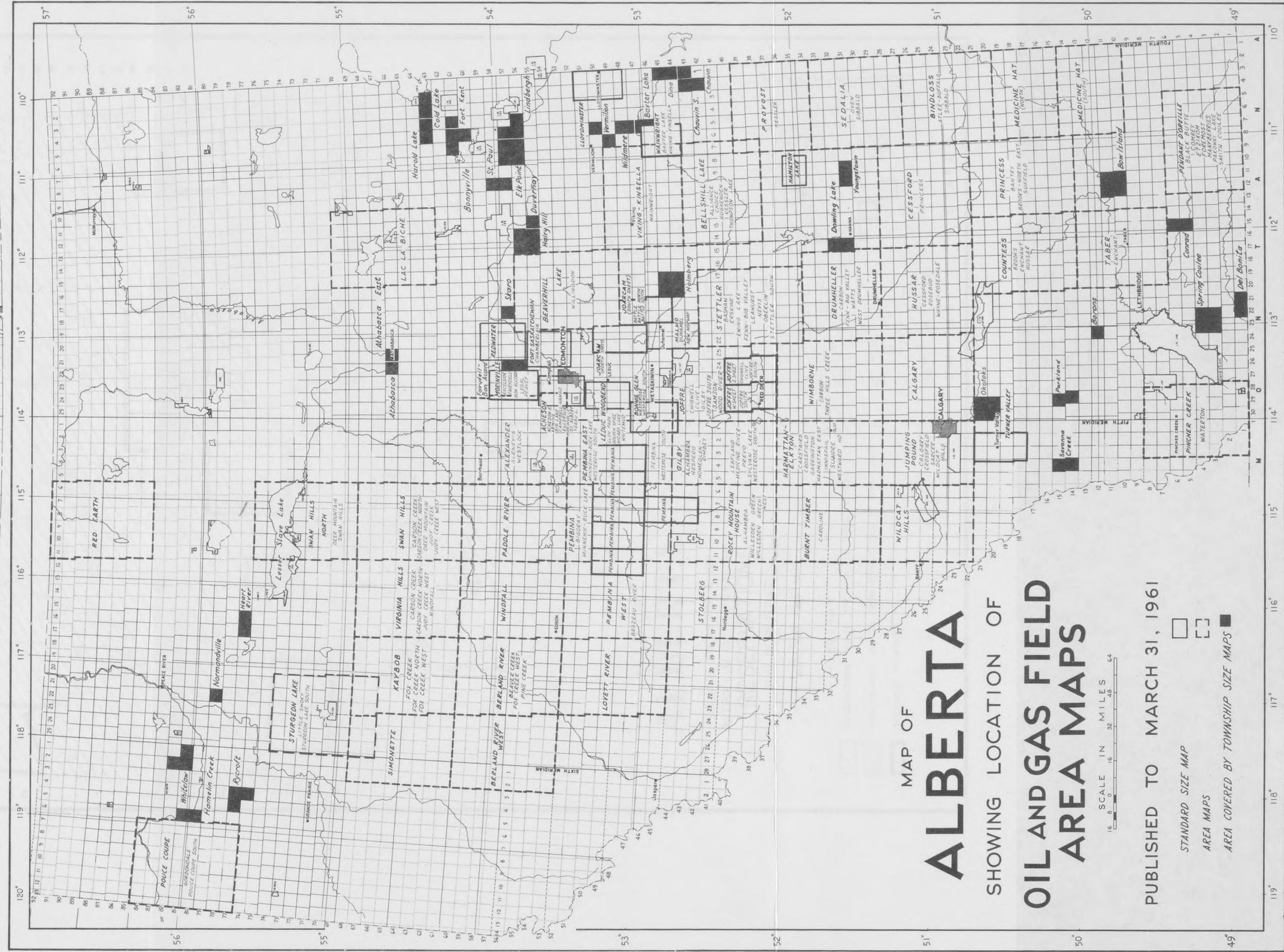
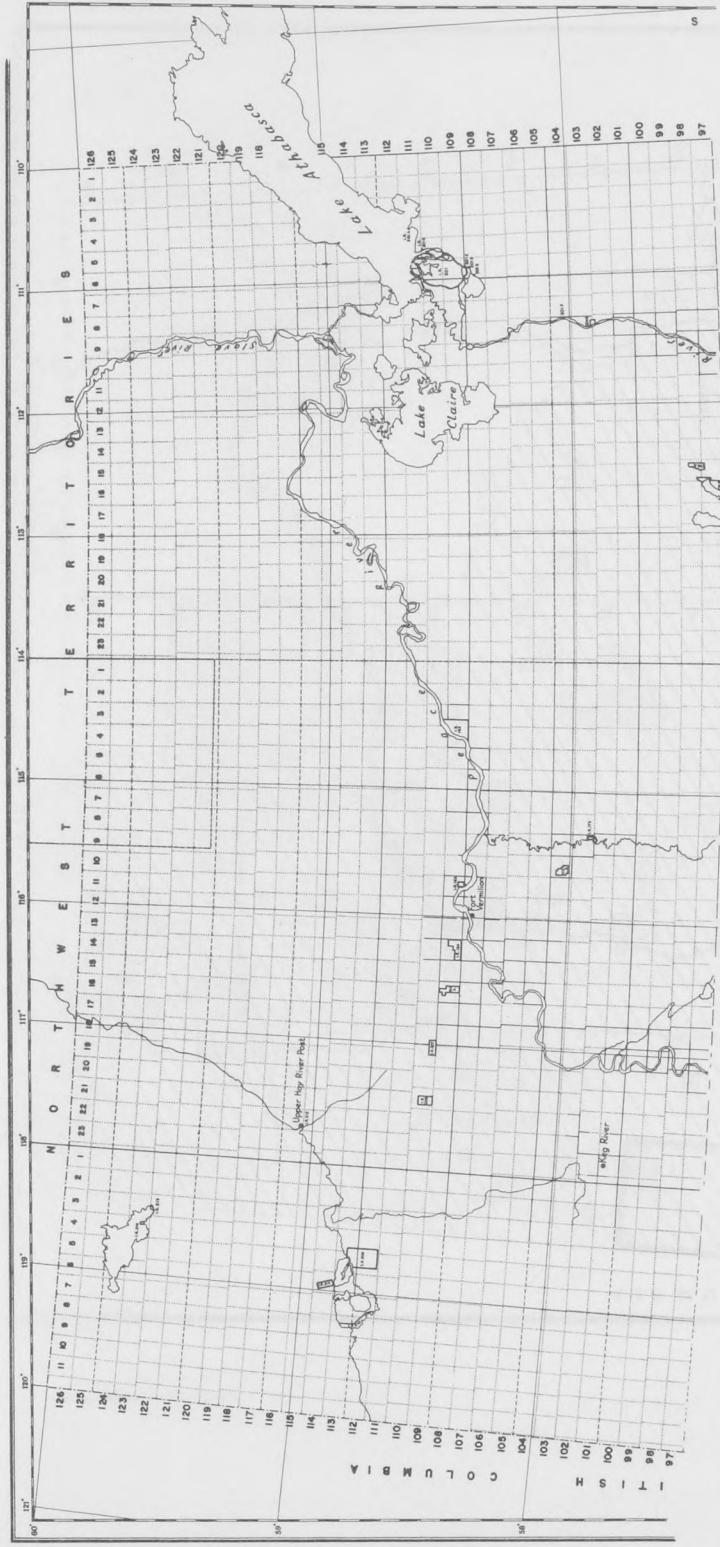
Type of Document	1959-60	1960-61
Mechanic's Lien	41	42
Discharge of Mechanic's Lien	19	18
Bank Securities	164	379
Discharge of Bank Securities	16	155
TOTALS	240	594

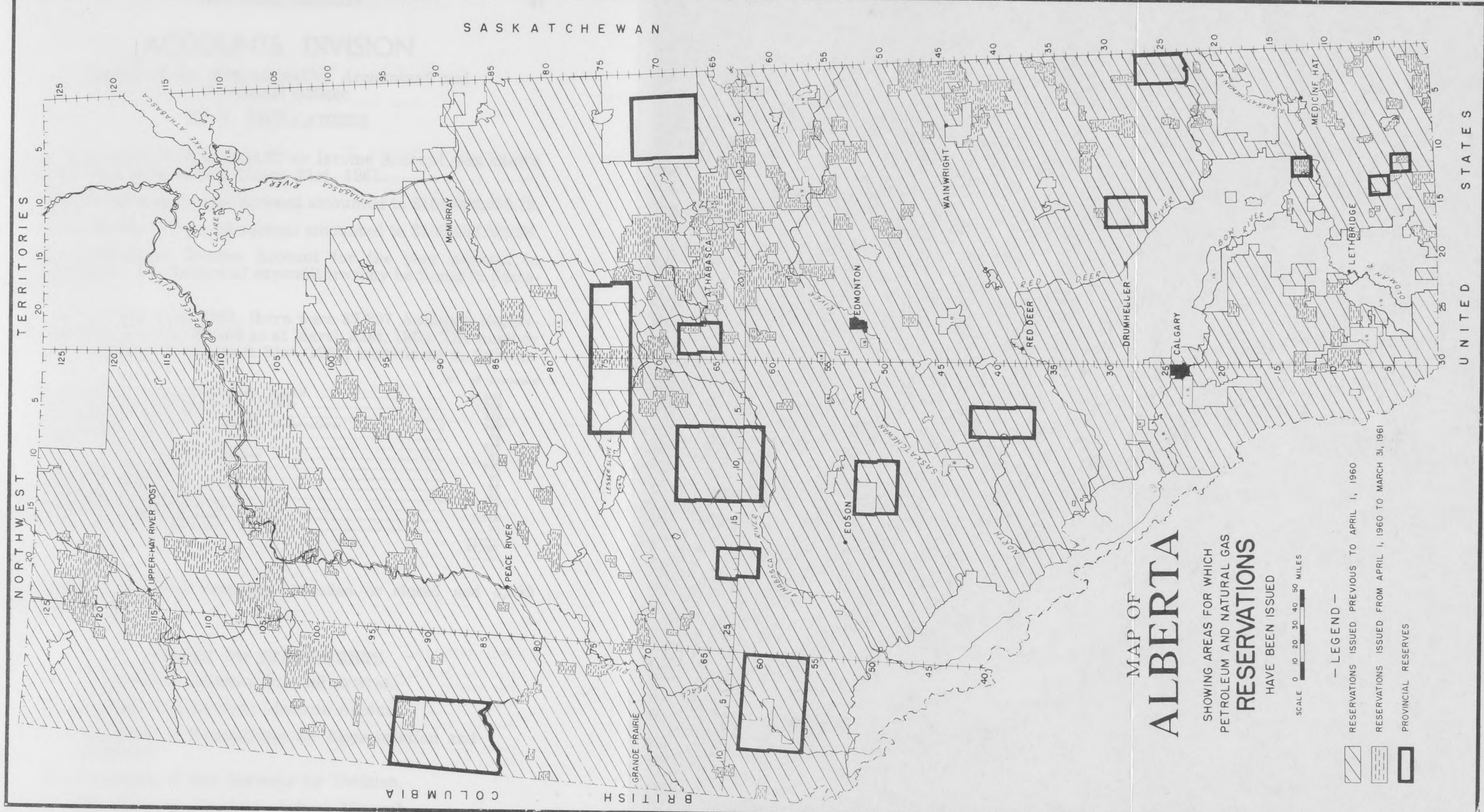
Pipe Line Permits and Licences continued to be recorded and included in the township records of the Division.

Nine notifications, for the issue of certificates of title were issued during the fiscal year of which three were issued for mineral sales, two for exchanges of minerals and four to vest title in the Dominion of Canada to all mines and minerals other than gold and silver under Indian Reserves Nos. 162, 207, 212 and 215.

Nineteen transfers of minerals were also issued to return minerals underlying road diversions to the owners of the adjacent minerals.

During the twelve years of the operation of the Department, one hundred and thirty-two notifications and twenty-three transfers have been issued.





MAP OF
ALBERTA
SHOWING AREAS FOR WHICH
PETROLEUM AND NATURAL GAS
RESERVATIONS
HAVE BEEN ISSUED

SCALE 0 10 20 30 40 50 MILES

- LEGEND —
- RESERVATIONS ISSUED PREVIOUS TO APRIL 1, 1960
 - RESERVATIONS ISSUED FROM APRIL 1, 1960 TO MARCH 31, 1961
 - PROVINCIAL RESERVES

ACCOUNTS DIVISION

Report of the Administrative Accountant and
Personnel Officer

W. E. SHILLABEER

A surplus of \$103,127,994.62 on Income Account was shown for the fiscal year ending March 31st, 1961.

Net Revenue on Income Account amounted to \$105,090,263.13.

Gross Receipts from all sources amounted to \$109,488,329.26.

Expenditure on Income Account for the year amount to \$1,962,268.51. Particulars of expenditure may be found in Statement "C".

As at March 31st, 1961, there were 37,307 Accounts Receivable as compared with 37,906 as at March 31st, 1960. The number of active accounts as at March 31st, 1961, is made up as follows:

	No. of Accounts
Petroleum and Natural Gas Leases, Rental	30,336
Petroleum and Natural Gas Leases, Royalty	1,783
Petroleum and Natural Gas Reservations	668
Petroleum and Natural Gas Drilling Reservations	139
Natural Gas Licences	29
Natural Gas Leases	572
Crown Reserve Natural Gas Licences	21
Coal Leases, Rental	507
Coal Leases, Royalty	92
Quarrying Royalty	86
Bituminous Sands, Rentals	68
Registration of Assignment Tax	247
Mineral Tax (Producing Area)	2,720
Mining Leases (Miscellaneous)	39
	<hr/>
	37,307

There were 4,849 accounts cancelled or closed and 4,250 accounts opened.

INDEX TO STATEMENTS

- A—Statement of Receipts from all sources.
- B—Statement of Receipts—Income Account.
- C—Statement of Expenditure by Appropriation and Character.
- D—Statement of Net Receipts by Division.
- E—Statement of Receipts—School Minerals.
- F—Statement of Receipts and Expenditure.
- G—Statement of Provincial Minerals Revenue by Fiscal Years received by the Province for the period April 1st, 1949, to March 31st, 1961.
- H—Statement of School Minerals Revenue by Fiscal Years received by the Province for the period April 1st, 1949, to March 31st, 1961.

Statement "A"

STATEMENT OF RECEIPTS FROM ALL SOURCES

From April 1st, 1960 to March 31st, 1961.

	Gross Receipts	Refunds	Net Receipts
Income Account (See Statement "B")	\$105,279,645.20	\$ 189,382.07	\$105,090,263.13
Transferred Collections	454.76	—	454.76
Suspense (Unapplied receipts carried forward subject to refund)	4,208,229.30	4,031,369.20	176,860.10
	<u>\$109,488,329.26</u>	<u>\$ 4,220,751.27</u>	<u>\$105,267,577.99</u>

Statement "B"

STATEMENT OF RECEIPTS - INCOME ACCOUNT

From April 1st, 1960 to March 31st, 1961.

INCOME ACCOUNT:

PROVINCIAL MINERALS:

	Gross Receipts	Refunds	Net Receipts
Coal Fees, Rentals, etc.	\$ 49,277.80	\$ 3,175.50	\$ 46,102.30
Coal Royalty	55,686.13	—	55,686.13
Coal Mines Act Sundry Revenue	2,539.85	5.00	2,534.85
Petroleum and Natural Gas Fees, Rentals, etc.	29,413,960.66	145,263.48	29,268,697.18
Petroleum and Natural Gas Royalty	25,713,278.75	15,272.05	25,698,006.70
Crown Reserve Sales	42,245,215.78	—	42,245,215.78
Mining Miscellaneous	867,889.79	6,067.91	861,821.88

SCHOOL MINERALS

Coal Fees, Rentals, etc.	2,737.96	—	2,737.96
Coal Royalty	17,134.99	—	17,134.99
Petroleum and Natural Gas Fees, Rentals, etc.	1,639,412.88	9,276.00	1,630,136.88
Petroleum and Natural Gas Royalty	2,048,349.39	5,320.46	2,043,028.93
Crown Reserve Sales	1,882,297.25	—	1,882,297.25
Mining Miscellaneous	9,791.40	—	9,791.40

MINERAL TAXATION ACT:

Mineral Tax	1,264,390.32	3,326.67	1,261,063.65
PIPE LINE ACT			
SUNDRY REVENUE	10,110.50	—	10,110.50
ADMINISTRATION			
SUNDRY REVENUE	57,342.62	1,675.00	55,667.62
MISCELLANEOUS (Casual)	229.13	—	229.13
TOTAL INCOME ACCOUNT			
(Carried to Statement "A") ..	<u>\$105,279,645.20</u>	<u>\$ 189,382.07</u>	<u>\$105,090,263.13</u>

ACCOUNTS DIVISION

49

EXPENDITURE CLASSIFIED BY APPROPRIATIONS AND CHARACTER FOR THE YEAR ENDED MARCH 31st, 1961 INCOME ACCOUNT

Statement "C"

SERVICE	2002 General Administration	2004 Pipe Lines Division	2005 Geological Division	2006 Mines Division	2007 Mineral Rights Division	2008 Mineral Tax Division	2009 Oil and Gas Conservation Board	2010 Technical Division	2013 Administration Gas Resources Preservation Act	2014 Right of Entry Arbitration Board	2015 Supervisory and Safety Training Program	2016 Geophysical Division	2017 Abandonment of Mining Properties	2018 Redemption of Mineral Titles	TOTAL
Advertising	75.00				12,289.85										12,364.85
Automobiles	1,840.76	5,859.19		1,840.76						3,648.00					13,188.71
Books and Binding	532.38	16.61		2.00	16.21			100.00		21.00		226.38			914.58
Contract Labour													254,455.14		254,455.14
Equipment	1,154.99	325.10		56.08	738.56	1,348.37		1,550.31		145.68					5,319.09
Examinations				509.02											509.02
Freight, Express and Cartage	397.92														397.92
Grants											3,600.00				3,600.00
Miscellaneous Supplies & Expenses	571.99	278.30		94.97	398.50	100.54		6,848.63		191.83		51.60			8,536.36
Newspapers and Periodicals	421.41	31.49		5.00	84.00					48.25					590.15
Postage	1,331.00	311.00		504.40	7,614.82	1,941.00		266.00		544.78		189.00			12,702.00
Printing and Stationery	9,951.20	2,133.36		1,390.59	7,254.51	935.67		5,232.29		858.96		9.83			27,766.41
Rates, Rentals and Insurance	167.72	621.49		189.12	80.00		98,711.76			518.68		60.50			100,349.27
Redemption of Mineral Titles (Refunds)														23,825.67	23,825.67
Repairs and Replacements	1,219.39	97.79		178.98	1,006.21	402.29		706.63		125.55		21.30			3,758.14
Salaries	134,980.92	41,211.19	3,246.68	63,609.86	220,089.86	70,565.96		196,105.06		68,394.27		31,412.75			829,616.55
Special Services							605,003.61			100.00					605,103.61
Stenographic Services	10.50								21.00						31.50
Telegrams and Telephones	1,742.68	1,603.59		336.30	3,304.27	68.55	58.50	1,392.32		433.75		946.70			9,886.66
Travelling Expenses	2,183.10	7,112.60		7,961.39	3,542.24	2,861.42		545.03		7,743.28		17,403.82			49,352.88
TOTAL Income Account	156,550.96	59,601.71	3,246.68	76,678.47	256,419.03	78,223.80	703,773.87	212,746.27	21.00	82,774.03	3,600.00	50,321.88	254,455.14	23,825.67	1,962,268.51

Statement "D"

STATEMENT OF NET RECEIPTS BY DIVISIONS

For Fiscal Year Ending March 31st, 1961

INCOME ACCOUNT:

Mineral Rights Division	\$103,760,657.38
Mineral Tax Division	1,261,063.65
Mines Division	2,534.85
Pipe Line Division	10,110.50
Miscellaneous (Administration Sundry Revenue, Sale of Salvage, etc.)	55,896.75

TRANSFERRED TO OTHER DEPARTMENTS 454.76

SUSPENSE (Unapplied receipts carried forward, subject to refund) 176,860.10

\$105,267,577.99

Statement "E"

STATEMENT OF RECEIPTS - SCHOOL MINERALS

From April 1st, 1960 to March 31st, 1961

INCOME ACCOUNT:

	Receipts	Refunds	Net Revenue
Coal Fees, Rentals, etc.	\$ 2,737.96	\$	\$ 2,737.96
Coal Royalty	17,134.99	.....	17,134.99
Petroleum & Natural Gas Fees, Rentals, etc.	1,639,412.88	9,276.00	1,630,136.88
Petroleum & Natural Gas Royalty	2,048,349.39	5,320.46	2,043,028.93
Crown Reserve Sales	1,882,297.25	.....	1,882,297.25
Mining Miscellaneous	9,791.40	.....	9,791.40
	<u>\$5,599,723.87</u>	<u>\$ 14,596.46</u>	<u>\$5,585,127.41</u>

Statement "F"

STATEMENT OF RECEIPTS AND EXPENDITURE

For Fiscal Year Ending March 31st, 1961

Gross Receipts	Refunds	Net Receipts	Net Revenue on Income Account	Total Expenditure from Appropriations	Surplus on Income Account
\$109,488,329.26	\$4,220,751.27	\$105,267,577.99	\$105,090,263.13	\$1,962,268.51	\$103,127,994.62

ACCOUNTS DIVISION

53

STATEMENT OF PROVINCIAL MINERALS REVENUE BY FISCAL YEARS
RECEIVED BY THE PROVINCE FOR THE PERIOD APRIL 1st, 1949
TO MARCH 31st, 1961

Statement "G"

	1949-50	1950-51	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61	Total
COAL													
Fees and Rentals	\$ 185,412.49	\$ 174,035.27	\$ 211,582.89	\$ 170,286.62	\$ 142,278.66	\$ 49,933.84	\$ 50,132.58	\$ 66,415.78	\$ 75,001.67	\$ 58,407.60	\$ 57,258.47	\$ 46,102.30	\$ 1,286,848.17
Royalty	600,493.96	577,667.84	394,441.24	354,123.99	268,694.28	216,147.06	201,607.49	151,790.88	102,601.90	95,187.48	79,088.05	55,686.13	3,097,530.80
Sundry Revenue	6,183.50	5,335.30	5,209.45	4,526.05	3,902.20	3,067.90	2,816.20	2,792.85	3,040.30	2,504.50	2,451.75	2,534.85	44,364.85
PETROLEUM AND NATURAL GAS													
Fees and Rentals	5,741,111.95	9,034,896.06	14,134,672.25	18,236,470.24	23,096,649.12	19,057,601.56	19,869,509.92	24,307,569.78	29,309,061.99	28,112,930.30	30,919,192.69	29,268,697.18	251,088,363.04
Royalty	3,368,918.86	4,760,569.46	10,062,772.17	12,353,945.64	17,048,688.02	18,519,831.09	26,610,868.37	34,489,488.26	30,352,487.86	23,502,148.38	25,357,608.49	25,698,006.70	232,125,333.30
Crown Reserve Sales	23,180,998.77	28,008,052.42	12,517,931.33	19,659,005.63	49,590,009.60	38,954,155.80	71,931,568.77	67,531,659.11	56,508,696.49	52,617,146.15	80,141,628.00	42,245,215.78	542,886,067.85
SALT													
Fees and Rentals	564.00	3,129.00	1,005.60	1,005.60	1,005.60	1,005.60	1,005.60	1,010.60	1,010.60	1,005.60	1,005.60	1,005.60	13,759.00
Royalty	2,024.92	9,230.96	4,895.32	6,806.71	7,063.37	7,978.06	9,868.92	10,050.54	9,859.84	10,130.02	10,677.35	11,725.31	100,311.32
QUARRYING													
Fees and Rentals	1,019.31	1,176.72	291.28	227.23	325.01	185.52	173.30	213.25	117.75	110.00	165.00	125.00	4,129.37
Royalty	29,939.08	36,486.29	27,908.36	29,309.75	38,798.28	41,181.51	39,552.17	53,590.28	45,540.05	50,194.15	58,825.21	56,116.01	507,441.14
QUARTZ													
Fees and Royalty	377.56	630.00	853.47	3,826.17	15,750.92	3,283.19	1,944.82	1,180.35	1,040.00	4,079.76	680.00	810.00	34,456.24
PLACER													
Fees and Royalty	—	325.08	42.79	30.00	30.00	1,510.00	1,117.50	1,346.15	500.00	690.00	490.00	250.00	6,331.52
BITUMINOUS SANDS													
Fees, Rentals and Royalty	13,350.28	7,173.20	7,173.20	52,480.95	62,994.50	42,543.76	197,997.20	89,878.58	479,047.55	363,416.28	544,075.79	663,393.28	2,523,524.57
MINING MISCELLANEOUS													
Fees, Rentals and Royalty	218,265.08	126,786.20	299,699.45	223,672.12	191,953.44	105,279.64	185,582.37	107,109.32	204,413.10	134,827.34	135,578.23	128,396.68	2,061,562.97
MINERAL TAXATION ACT													
Non-Producing Area Tax	297,883.10	307,062.62	323,185.71	310,285.08	283,853.18	277,842.74	264,496.50	272,883.90	282,057.60	306,179.40	337,452.83	303,051.45	3,566,234.11
Producing Area Tax	452,838.16	526,029.61	444,293.91	572,671.45	717,352.55	1,031,922.72	1,031,802.40	1,070,380.73	1,232,795.31	1,115,478.85	909,799.94	957,673.20	10,063,038.83
Certificate Fees	286.50	511.00	2,320.10	3,204.00	1,055.50	1,467.00	914.50	1,101.50	1,056.50	472.00	545.50	339.00	13,273.10
PIPE LINE ACT SUNDRY REVENUE	—	—	—	—	—	—	—	—	—	—	6,297.50	10,110.50	16,408.00
ADMINISTRATION SUNDRY REVENUE	21,915.60	34,734.13	61,946.42	83,735.45	90,413.82	69,268.78	51,489.41	75,902.99	67,642.46	66,789.46	51,367.90	55,667.62	730,874.04
TOTAL	\$ 34,121,583.12	\$ 43,613,831.16	\$ 38,500,224.94	\$ 52,065,612.68	\$ 91,560,818.05	\$ 78,384,205.77	\$ 120,452,448.02	\$ 128,234,364.85	\$ 118,675,970.97	\$ 106,441,697.27	\$ 138,614,188.30	\$ 99,504,906.59	\$ 1,050,169,851.72

STATEMENT OF SCHOOL MINERALS REVENUE BY FISCAL YEARS
RECEIVED BY THE PROVINCE FOR THE PERIOD APRIL 1st, 1949
TO MARCH 31st, 1961

Statement "H"

	1949-50	1950-51	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61	Total
COAL													
Fees and Rentals	\$ 6,313.28	\$ 6,965.91	\$ 3,761.05	\$ 5,888.62	\$ 6,474.45	\$ 2,099.50	\$ 1,797.51	\$ 1,871.19	\$ 1,808.42	\$ 2,243.01	\$ 2,447.26	\$ 2,737.96	\$ 44,408.16
Royalty	51,074.51	45,643.83	42,969.61	25,368.52	17,874.97	14,759.80	15,232.15	13,343.74	6,621.37	4,488.33	11,215.39	17,134.99	265,727.21
PETROLEUM AND NATURAL GAS													
Fees and Rentals	514,065.59	744,745.23	1,245,877.55	1,445,874.57	1,501,344.28	1,597,125.63	1,500,750.38	1,512,245.53	1,735,009.23	1,721,016.74	1,762,471.04	1,630,136.88	16,910,662.75
Royalty	242,199.47	429,423.19	975,317.20	1,157,006.02	1,516,438.34	1,694,748.02	2,184,005.64	2,803,026.05	2,459,646.73	1,944,357.39	1,969,535.54	2,043,023.93	19,418,732.52
Crown Reserve Sales	50,449.43	1,072,579.97	693,357.64	3,868,438.03	3,646,107.46	1,059,164.00	4,143,163.73	1,519,201.38	2,133,139.64	992,806.31	1,181,349.17	1,882,297.25	22,242,054.01
BITUMINOUS SANDS													
Fees, Rentals and Royalty	1,845.00	565.00	565.00	892.05	932.10	623.20	1,184.20	1,558.12	8,618.62	3,277.25	4,827.26	8,651.51	33,539.31
MINING MISCELLANEOUS													
Fees, Rentals and Royalty .....	.....	3,896.01	3,768.15	1,008.00	23.00	350.61	734.75	853.00	717.00	763.72	584.78	1,139.89	13,838.91
	\$ 865,947.28	\$2,303,819.14	\$2,965,616.20	\$6,504,475.81	\$6,689,194.70	\$4,368,870.76	\$7,846,868.36	\$5,852,099.01	\$6,345,561.01	\$4,668,952.75	\$4,932,430.44	\$5,585,127.41	\$58,928,962.87

PERSONNEL

The number of employees in the Department increased by five from 197 on April 1st, 1960, to 202 on April 30th, 1961.

During the same period, 29 employees left the Department. Of these 7 left the city, 4 resigned to accept employment outside the Government service, 2 were dismissed, 2 retired, and the remainder left for various other reasons.

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